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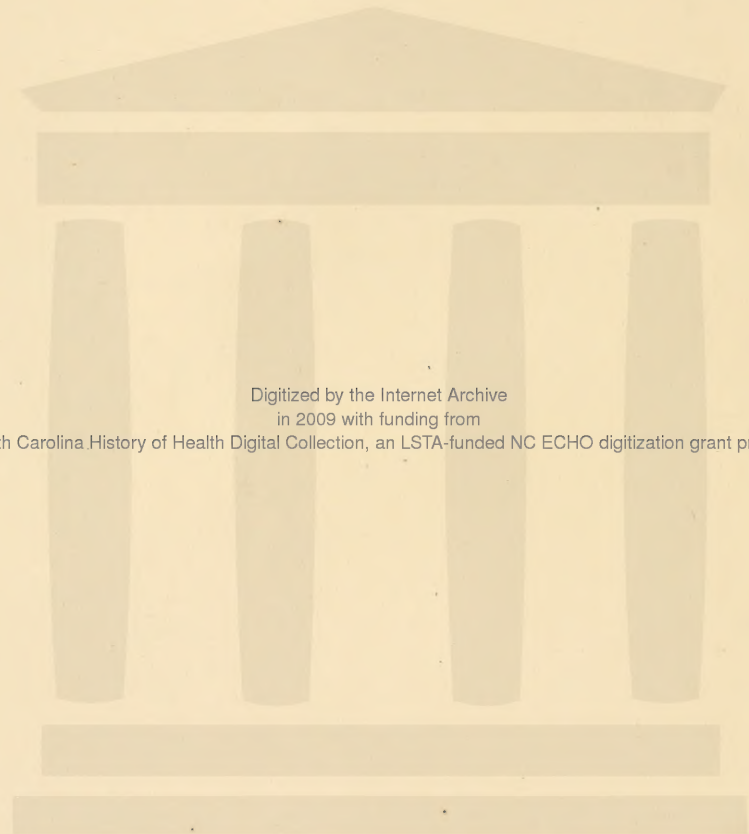

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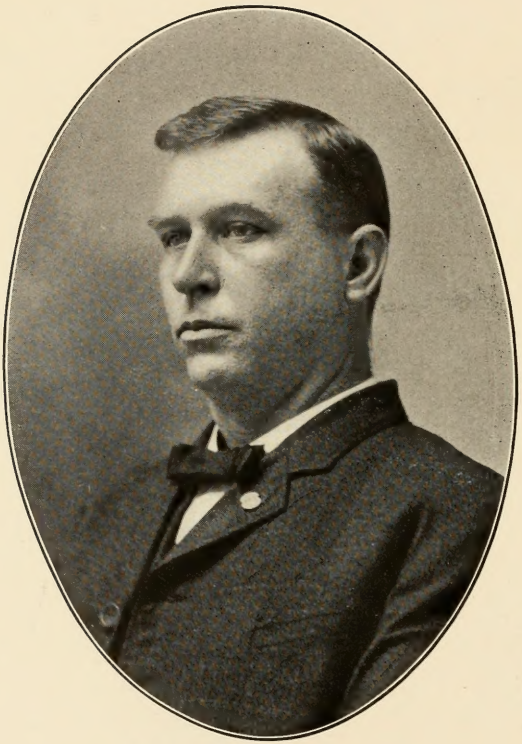

Truly Yours
D. J. Taylor M.D

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA.

FIFTY-SECOND ANNUAL MEETING

HELD AT

Greensboro, N. C., May 23, 24 and 25, 1905.

PRESIDENT, DR. DAVID T. TAYLOE, WASHINGTON, N. C.
SECRETARY, DR. J. HOWELL WAY, WAYNESVILLE, N. C.

RALEIGH:
EDWARDS & BROUGHTON, PRINTERS.
1905.

Publication Committee.

Dr. J. Howell Way.....Waynesville.
Dr. Geo. W. Pressly.....Charlotte.
Dr. H. McKee Tucker.....Raleigh.

"It is to be understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the transactions of the Society."—*Extract from By-Laws, Chap. 10, Sec. 8.*

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ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1905.

	Date.	Place.	President.	Vice-Presidents.	Secretary.	Treasurer.
	1849	Raleigh	F. J. Hill		W. H. McKee	
1	1850	Raleigh	Edmund Strudwick	F. J. Haywood, C. E Johnson, J. E. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill.
2	1851	Raleigh	Edmund Strudwick	C. E. Johnson	W. H McKee	W. G Hill.
3	1852	Wilmington	J. E. Williamson	Thomas N. Cameron, William G. Hill, Johnston B Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker.
4	1853	Fayetteville	J. E. Williamson	W. G. Hill, Johnston B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Dupree.
5	1854	Raleigh	J. H. Dickson	N. J. Pittman, J. G. B. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree.
6	1855	Salisbury	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn.
7	1856	Raleigh	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn.
8	1857	Edenton	C. E. Johnson	Warcellus Whitehead, O. F. Manson, H. W. Faison, E T. Gibson.	W. G. Thomas	J. B. Dunn.
9	1858	New Bern	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn.
10	1859	Statesville	W. H. McKee	James G. Ramsay, P. E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas	C. W. Graham.
11	1860	Washington	N. J. Pittman	P. T. Henry, R H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham.
12	1861	Morganton	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham.
13	1866	Raleigh	J. J. Summerell		W. G. Thomas	C. W. Graham.
14	1867	Tarboro	W. G. Thomas	E. Burke Haywood R. H. Winborne, W. L. Barrow, J. W. Jones.	S. S. Satchwell	C. W. Graham.
15	1868	Warrenton	S. S. Satchwell	Hugh Kelly, George E. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones.
16	1869	Salisbury	E. Burke Haywood	Thomas E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones.
17	1870	Wilmington	C. J. O'Hagan	E. A. Anderson, F. N. Luckey, W. R. Sharpe, R. L Payne.	Thomas F. Wood	J. W. Jones.
18	1871	Raleigh	Hugh Kelly	D. N. Patterson, R. C. Pearson, J. B. Seavy, G. L. Kirby.	Thomas F. Wood	J. W. Jones.
19	1872	New Bern	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcom.	James McKee	J. W. Jones.

20	1873	Statesville	M. Whitehead	W. T. Ennett, William Little, Charles Duffy, T. P. German.	James McKee	H. T. Bahnson.
21	1874	Charlotte	W. A. B. Norcom	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	James McKee	H. T. Bahnson.
22	1875	Wilson	J. W. Jones	Walter Debnam, J. A. Gibson, Wm. Little, D. N. Patterson.	James McKee.	H. T. Bahnson.
23	1876	Fayetteville	Peter E. Hines	Joseph H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee	H. T. Bahnson.
24	1877	Salem	George A. Foote	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill.	James McKee	A. G. Carr.
25	1878	Goldsboro	R. L. Payne	E. M. Rountree, Richard Anderson, S B Flowers, L. A. Stith.	L. J. Picot	A. G. Carr.
26	1879	Greensboro	Charles Duffy, Jr	J. A. Gibson, Willis Allston, James McKee, A. A. Hill.	L. J. Picot	A. G. Carr.
27	1880	Wilmington	J. F. Shaffer	J. K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J Picot	A. G. Carr.
28	1881	Asheville	R. B. Haywood	J. A. McRee, W H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot	A. G. Carr.
29	1882	Concord	Thomas F. Wood	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot	A. G. Carr.
30	1883	Tarboro	J. K. Hall	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot	A. G. Carr.
31	1884	Raleigh	A. B. Pierce	F W. Potter, G. W. Graham, R. Dillard, G W. Long.	L. J. Picot	A. G. Carr.
32	1885	Durham	W. C. McDuffie	James McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr	W. C. Murphy	R. L. Payne, Jr.
33	1886	New Bern	Joseph Graham	H T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	J. M. Baker	R. L. Payne, Jr.
34	1887	Charlotte	H. T. Bahnson	G. G. Smith, J. L. Nicholson, C. M. Poole, H. B. Ferguson.	J. M. Baker	R. L. Payne, Jr.
35	1888	Fayetteville	T. D. Haigh	W. T. Ennett, J. A. Dunn, T. E. Anderson.	J. M. Baker	C. M. Poole.
36	1889	Elizabeth City	W. T Ennett	W. J. Jones, S. W. Stevenson, G. W. Long.	J. M. Baker	C. M. Poole.
37	1890	Oxford	G. G. Thomas	R. L. Payne, Jr., Richard Dillard, S. W. Booth.	J. M. Hays	C. M. Poole.
38	1891	Asheville	R. H. Lewis	S. W. Battle, J. L. Nicholson, W. H. Lilly.	J. M. Hays	C. M. Poole.
39	1892	Wilmington	W. T. Cheatham	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. G. Hilliard.	J. M. Hays	C. M. Poole.
40	1893	Raleigh	J. W. McNeill	W. C. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett	M. P Perry.
41	1894	Greensboro	W. H. H. Cobb	J. A. Hodges, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett	M. P. Perry.

ROSTER OF NORTH CAROLINA MEDICAL SOCIETY—CONTINUED.

	Date.	Place.	President.	Vice-Presidents.	Secretary.	Treasurer.
42	1895	Goldsboro	J. H. Tucker	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett	M. P. Perry.
43	1896	Winston-Salem	R. L. Payne	S. D. Booth, J. P. Monroe, J. A. Burroughs, J. E. Grimsley.	R. D. Jewett	M. P. Perry.
44	1897	Morehead City	P. L. Murphy	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett	M. P. Perry.
45	1898	Charlotte	Francis Duffy	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell.	R. D. Jewett	M. P. Perry.
46	1899	Asheville	L. J. Picott	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	George W. Pressly	G. T. Sikes.
47	1900	Tarboro	George W. Long	C. M. Poole, Jas. M. Parrott, T. B. Williams, W. D. Hilliard.	George W. Pressly	G. T. Sikes.
48	1901	Durham	Julian M. Baker	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	George W. Pressly	G. T. Sikes.
49	1902	Wilmington	Robert S. Young	A. G. Carr, E. D Dixon Carroll, I. M. Taylor, J. M. Parrott.	George W. Pressly	G. T. Sikes.
50	1903	Hot Springs	A. W. Knox	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L Nicholson.	J. Howell Way	G. T. Sikes.
51	1904	Raleigh	H. B. Weaver	Jno. Hey Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way	G. T. Sikes.
52	1905	Greensboro	David T. Tayloe	C. A. Julian, John T. Burrus, I. W. Faison.	J. Howell Way	G. T. Sikes.

PAST MEMBERS BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

Name and Post-office.	Date.
* JAMES H. DICKSON, Wilmington	1859-1866
* Charles E. Johnson Raleigh	1859-1866
* Caleb Winslow, Hertford	1859-1866
* Otis F. Manson, Townsville	1859-1866
* William H. McKee, Raleigh	1859-1866
* Christopher Happoldt, Morganton	1859-1866
* J. Graham Tull, New Bern	1859-1865
* SAMUEL T. IREDELL, Secretary	1859-1866
* N. J. PITTMAN, Tarboro	1866-1872
* E. Burke Haywood, Raleigh	1866-1872
* R. H. Winborne, Edenton	1866-1872
* S. S. Satchwell, Rocky Point	1866-1872
* J. J. Summerell, Salisbury	1866-1872
* R. B. Haywood, Raleigh	1866-1872
* M. Whitehead, Salisbury	1866-1868
J. F. Shaffner, Salem	1868-1872
* WILLIAM LITTLE, Secretary	1866-1872
* CHARLES J. O'HAGAN, Greenville	1872-1879
* W. A. B. Norcom, Edenton	1872-1878
* C. Tate Murphy	1872-1878
* George A. Foote, Warrenton	1872-1878
* J. W. Jones, Tarboro	1872-1878
* R. L. Payne, Lexington	1872-1878
CHARLES DUFFY, JR. New Bern	1872-1878
P. E. HINES, Raleigh	1878-1884
T. D. Haigh, Fayetteville	1878-1884
* R. I. Hicks Williamsboro	1878-1880
* George L. Kirby, Goldsboro	1878-1884
* Thomas F. Wood, Wilmington	1878-1884
Joseph Graham, Charlotte	1878-1884
H. T. BAHNSON, Salem	1878-1884
R. H. Lewis Raleigh	1880-1884
* WILLIAM R. WOOD, Scotland Neck	1884-1890
A. W. Knox, Raleigh	1884-1890
Francis Duffy, New Bern	1884-1890
P. L. Murphy, Morganton	1884-1890
Willis Alston, Littleton	1884-1890
W. J. H. BELLAMY, Wilmington	1884-1890
J. A. Reagan, Weaverville	1884-1890
R. L. Payne, Jr., Norfolk, Va	1890-1892
George W. Purefoy, Asheville	1890-1892
George G. Thomas, Wilmington	1890-1894
Robert S. Young, Concord	1890-1894
George W. Long, Graham	1890-1896
W. H. WHITEHEAD, Rocky Mount	1890-1896
L. J. PICOT, Littleton	1890-1896
JULIAN M. BAKER, Tarboro	1892-1898
H. B. Weaver, Asheville	1892-1898
† T. S. Burbank, Wilmington	1894-1898
* J. M. Hays, Greensboro	1894-1897
D. T. TAYLOE, Washington	1896-1902
† R. H. Whitehead, Chapel Hill	1896-1897
THOMAS E. ANDERSON, Statesville	1896-1902
Kemp P. Battle, Raleigh	1897-1900
J. HOWELL WAY, Waynesville	1897-1902
W. H. H. Cobb, Goldsboro	1898-1900
Albert Anderson, Wilson	1898-1902
E. C. REGISTER, Charlotte	1898-1902
Thomas S. McMullan, Hertford	1900-1902
John C. Walton, Chase City, Va	1900-1902

* Deceased. † Resigned.

NOTE.—The names of members who served as President appear in CAPS; of those who served as Secretary in SMALL CAPS.

BOARD OF MEDICAL EXAMINERS, 1902—1908.

CHARLES O'H. LAUGHINGHOUSE, President, Greenville, Obstetrics and Gynæcology.
GEORGE W. PRESSLY, Secretary, Charlotte, Chemistry and Pharmacy.
M. H. FLETCHER, Asheville, Physiology and Hygiene.
JAMES M. PARROTT, Kinston, Anatomy and Histology.
A. A. KENT Lenoir, Practice of Medicine.
J. T. J. BATTLE Greensboro, Materia Medica and Therapeutics.
FRANK H. RUSSELL, Wilmington, Surgery.

Officers and Committees—1905.

President—Dr. DAVID T. TAYLOE.....Washington.
First Vice-President—Dr. C. A. JULIAN.....Thomasville.
Second Vice-President—Dr. JOHN T. BURRUS.....High Point.
Third Vice-President—Dr. I. W. FAISON.....Charlotte.
Secretary—Dr. J. HOWELL WAY.....Waynesville.
Treasurer—Dr. GINNADA T. SIKES.....Grissom.

Council.

First District—Dr. Oscar McMullan, Elizabeth City.
Second District—Dr. Jas. M. Parrott, Kinston.
Third District—Dr. Frank H. Russell, Wilmington.
Fourth District—Dr. Albert Anderson, Wilson.
Fifth District—Dr. Jacob F. Highsmith, Fayetteville.
Sixth District—Dr. Hubert A. Royster, Raleigh (Secretary).
Seventh District—Dr. Edward C. Register, Charlotte (President).
Eighth District—Dr. David A. Stanton, High Point.
Ninth District—Dr. Thomas E. Anderson, Statesville.
Tenth District—Dr. James A. Burroughs, Asheville.

**Orator*—Dr. Ben. K. Hays, Oxford.
Essayist—Dr. John Hill Tucker, Henderson.
Leader of Debate—Dr. E. T. Dickenson, Wilson.

Members House of Delegates American Medical Association—Drs. J. Howell Way, Waynesville; Albert Anderson, Wilson.

Committee on Public Policy and Legislation—Drs. R. H. Lewis, Raleigh; George G. Thomas, Wilmington; George W. Long, Graham; and *ex-officio*, Drs. D. T. Tayloe, Washington; J. Howell Way, Waynesville.

Committee on Publication—Drs. J. Howell Way, Waynesville; George W. Pressly, Charlotte; H. McKee Tucker, Raleigh.

Committee on Finance—Drs. James A. Burroughs, Asheville; Thomas E. Anderson, Statesville; Frank Duffy, New Bern.

Committee on Obituaries—Drs. C. M. Poole, Craven; H. H. Harris, Wake Forest; K. P. Battle, Jr., Raleigh.

Committee on Scientific Work—Drs. R. H. Whitehead, Chapel Hill; D. J. Hill, Lexington; J. Howell Way, Waynesville.

Local Members Committee Arrangements for Session 1905—Dr. Charles Roberson, Greensboro.

*Dr. C. P. Ambler was elected Orator at the annual session in Raleigh, later he resigned when President Tayloe appointed Dr. Hays who delivered an Oration of superior excellence at the Greensboro session.

Officers and Committees—1906.

President—Dr. EDWARD C. REGISTER .....Charlotte
First Vice-President—Dr. L. B. McBRAYER .....Asheville
Second Vice-President—Dr. W. H. H. COBB, Jr. .....Goldsboro
Third Vice-President—Dr. W. O. SPENCER .....Winston
Secretary—Dr. J. HOWELL WAY .....Waynesville
Treasurer—Dr. GINNADA T. SIKES .....Grissom

Council.

First District—Dr. Oscar McMullan, Elizabeth City.
Second District—Dr. James M. Parrott, Kinston.
Third District—Dr. Frank H. Russell, Wilmington.
Fourth District—Dr. Albert Anderson, Wilson.
Fifth District—Dr. Jacob F. Highsmith, Fayetteville.
Sixth District—Dr. Hubert A. Royster, Raleigh (Secretary).
Seventh District—Dr. Edward C. Register, Charlotte (President).
Eighth District—Dr. David A. Stanton, High Point.
Ninth District—Dr. Thos. E. Anderson, Statesville.
Tenth District—Dr. James A. Burroughs, Asheville.

Orator—Dr. James M. Parrott, Kinston.
Essayist—Dr. Thos. S. McMullan, Hertford.
Leader of Debate—Dr. Samuel D. Booth, Oxford.

Members House of Delegates American Medical Association—Dr. J. Howell Way, Waynesville; Dr. James A. Burroughs, Asheville.

Committee on Public Policy and Legislation—Drs. R. H. Lewis, Raleigh; Geo. G. Thomas, Wilmington; P. L. Murphy, Morganton; (ex-officio) Edward C. Register, Charlotte; J. Howell Way, Waynesville.

Committee on Publication—Drs. Geo. W. Pressly, Charlotte; H. McKee Tucker, Raleigh; (ex-officio) J. Howell Way, Waynesville.

Committee on Finance—Drs. D. A. Stanton, High Point; C. J. Sawyer, Windsor; S. P. J. Lee, Dunn.

Committee on Scientific Work—Drs. R. H. Whitehead, Chapel Hill; O. C. Daniels, Oriental; (ex-officio) J. Howell Way, Waynesville.

Committee on Obituaries—Drs. C. M. Poole, Craven; H. H. Harris, Wake Forest; Kemp P. Battle, Jr., Raleigh.

Local Member Committee of Arrangements for Session in Charlotte, 1906—Dr. Robert L. Gibbon, Charlotte.

Chairmen of Sections—1906.*

Anatomy and Surgery—Dr. Lawrence E. Holmes, Asheville.
Materia Medica and Therapeutics—Dr. J. Clegg Hall, Boardman.
Practice of Medicine—Dr. E. C. Boyett, Mt. Holly.
Physiology and Chemistry—Dr. S. A. Stevens, Monroe.
Obstetrics—Dr. Cyrus Thompson, Jacksonville.
Gynaecology—Dr. Chas. W. Mosely, North Wilkesboro.
Medical Jurisprudence and State Medicine—Dr. W. F. Hargrove, Kinston.
Pathology and Microscopy—Dr. Thos. R. Little, Greensboro.
Railway Surgery—Dr. Robt. L. Gibbon, Charlotte.
Paediatrics—Dr. Eugene H. Brooks, Reidsville.

Delegates to Virginia Medical Society—Drs. Samuel D. Booth, Oxford; Cyrus Thompson, Jacksonville; J. B. Knight, Williamston; J. E. Grimsley, Greensboro; R. A. Whittaker, Kinston; J. A. Burroughs, Asheville.

Delegates to South Carolina Medical Association—Dr. J. R. Gordon, Jamestown; Dr. D. J. Hill, Lexington; Dr. Ben. S. Herring, Wilson; Dr. W. R. Kirk, Hendersonville; Dr. D. A. Garrison, Bessemer City.

Delegates to Mississippi Valley Medical Association—Dr. R. E. Mason, Charlotte; Dr. J. A. Stevens, Clinton; Dr. S. M. Mann, Moyock; Dr. J. A. Turner, High Point; Dr. W. P. Horton, North Wilkesboro; Dr. H. H. Dodson, Greensboro.

Board of Medical Examiners, 1902-'08—Charles O'H. Laughinghouse, President, Greenville, Obstetrics and Gynæcology; Geo. W. Pressly, Secretary, Charlotte, Chemistry and Pharmacy; M. H. Fletcher, Asheville, Physiology and Hygiene; James M. Parrott, Kinston, Anatomy and Histology; A. A. Kent, Lenoir, Practice of Medicine; J. T. J. Battle, Greensboro, Materia Medica and Therapeutics; Frank H. Russell, Wilmington, Surgery.

The North Carolina State Board of Health—Geo. G. Thomas, M. D., President, Wilmington; S. Westray Battle, M. D., Asheville; Henry W. Lewis, M. D., Jackson; Thos. E. Anderson, M. D., Statesville; W. P. Ivey, M. D., Lenoir; J. Howell Way, M. D., Waynesville; W. O. Spencer, M. D., Winston-Salem; J. L. Ludlow, C. E., Winston-Salem; Richard H. Lewis, M. D., Secretary and Treasurer, Raleigh.

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*The fifty-third regular annual session of the Medical Society of the State of North Carolina will be held in Charlotte, N. C., May 29, 30 and 31, 1906. The cordial co operation of the officers and members of all component county societies is invited to assist in making the occasion a success.

MINUTES

OF THE

FIFTY-SECOND ANNUAL SESSION

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA,

HELD IN

GREENSBORO, N. C.,

May 23, 24 and 25, 1905.

TUESDAY MORNING, May 23d.

Society called to order at 10 a. m., by Dr. Charles Roberson, Chairman of Arrangements, in the court-house at Greensboro.

DR. ROBERSON: I have been given the privilege of calling together the Fifty-second Annual Session of the North Carolina Medical Society, and I feel that they have given me a very great honor—one which I appreciate very deeply.

In beginning our deliberations, I will first ask the invocation of the Great Physician.

We will now be led in prayer by the Rev. H. W. Battle.

The REV. DR. BATTLE:

Let us pray!

Our Father, who art in heaven, we devoutly thank Thee for all Thy benefits; for life, health, happiness and the opportunities of the present hour. We rejoice in the relation which we sustain to Thee, and to our fellow-man. Our Lord taught us that we should love Thee supremely, and our fellow-man even as we love ourselves. We thank Thee that, though we are needy creatures, and the cry for health is the cry of humanity, Thou art ever willing and able to hear and answer that cry. We rejoice, too, that Thou hast raised up noble men, endowed and qualified them to be co-laborers with Thee, for the amelioration of the condition of humanity, for the relief of suffering, for the prolongation of human life.

We shall welcome within the gates of our city to-day the members of the medical profession of North Carolina, but in the beginning of

this service we turn to Thee to invoke Thy tenderest benediction upon them. God bless each one. Grant that absent loved ones, and the patients from whom they must be separated for a while, may be under Thy special care and protection. God bless also those devoted women who watch through the still, long hours of the night, and minister, like white-robed angels beside the couch of the suffering and the dying; God grant unto these noble men and women His love, His care, His tender benediction. And we humbly beg Thy favor to be extended to this organization in its present session. May this be the most enjoyed, the most harmonious, the most successful in all its high interests, of all the sessions which have been held by this great and noble body; and these things we ask in the name of Jesus Christ, our Redeemer. Amen.

Dr. Charles Roberson: It is now with a great deal of pleasure that I introduce to you a man who is perhaps the leading educator of North Carolina. He is the leading educator of ladies in North Carolina, anyway—a man who is perhaps known by as many fathers as any man in North Carolina.

We will now be addressed by Dr. Charles D. McIver, President of the State Normal and Industrial College. (Applause.)

Dr. Charles D. McIver, President State Normal and Industrial College:

Mr. President, Ladies and Gentlemen of the Medical Association of North Carolina.

I feel embarrassed this morning, because I am to speak to people about whose business I know almost nothing: I am to speak for the Chamber of Commerce, the business men of this city, and it gives me pleasure to welcome you in their name.

The mystery of money is only equalled, in my mind, by the mystery of medicine, and I don't doubt it has occurred to you as odd, that a professional man, and especially a school teacher, should be selected to speak for the Chamber of Commerce. I am reminded of Saxe's poem on "The Money King," which opens as follows:

"As landsmen, sitting in luxurious ease,
Talk of the dangers of the stormy seas;
As fireside travelers, with portentious mien,
Tell tales of countries they have never seen;
As parlor-soldiers, graced with fancy scars,
Rehearse their bravery in imagined wars;

As arrant dunces have been known to sit
In grave discourse of wisdom and of wit;
As paupers, gathered in congenial flocks,
Babble of banks, insurance and stocks;
As each is oftenest eloquent of what
He hates or covets, but possesses not;
As cowards talk of pluck; misers, of waste;
Scoundrels, of honor; country clowns, of taste—
I sing of Money!"

(Applause.)

There is, however, my friends, some significance (if you will pardon my being personal) in a teacher's representing a Chamber of Commerce in this city, for there is no business in Greensboro which does not acknowledge an educational representative. It is a people who have always honored the teaching profession, and this city is growing largely because of the fact that it does show a deep interest in educational work here and elsewhere. There is not a business man in this community who does not contribute liberally of his time and means to the public service, sometimes in one direction, sometimes in another, and you could not come among people, in this State or out of it, who would give you more cordial welcome.

The business men for whom I speak this morning are glad that you are here. They are not present in large numbers to welcome you, because they are busy at their work, but in their hearts they welcome you as cordially as any company of people could give you welcome. They welcome any convention of any kind that represents this great Commonwealth of ours. The preachers and their colleagues in religious work; the school teachers, and the friends of education, the editors, the politicians, the fraternal organizations, hold conventions in Greensboro, and in each instance the business men respond in such way as becomes the citizenship of a growing, public-spirited city.

But just exactly as the physician, whether in the country or in the city, is the favorite hero of any community, its most universally beloved citizen, you can readily understand that Greensboro, which welcomes every commercial, political or educational convention, is immeasurably gratified that the North Carolina Medical Society has chosen this city in which to hold its meeting. I do not need to waste words, or to waste your time in emphasizing that welcome. I hope you will pardon me for saying that no men in North Carolina have greater influence, or greater opportunity to bless it and to advance its development, than the physicians by wise leadership in the various communities in the State.

You occupy a peculiar position, a position different from any other profession, in that while intelligent people appreciate all profes-

sions, there are those who think lawyers are not honest, because they represent causes, and are paid for representing particular causes; they get the impression that there is something sharp and slick and sly, when the truth is that there are very few people in this world that are any more honest than the lawyers themselves. In fact, every time one is paid to appear here, there is one to show he is not honest. And here is a judge, that is probably not so severely criticized as the lawyer, and yet there is a feeling of distrust that, because he is so very smart, that he is dangerous. The lawyer is regarded as a great white elephant, just because he has so much power, and while they have respect for that profession, yet there is that distrust. Yours is the only profession that has the absolute confidence of the ignorant, (applause) and gentlemen, I want to say that the man who has the confidence of the ignorant has the greatest responsibility in this world. It is impossible to overstate the physician's opportunity to give tone and strength to our citizenship.

Speaking of citizenship, I had a girl in my civics class not long ago to give a definition of a good citizen. She said: "He is a man who works and who earns a living for those dependent upon him. He pays his taxes cheerfully and promptly. He must obey the laws of his country and must study those laws with a view to helping to improve them. He must love his country and be willing to die for it, in time of war, and in time of peace he must not complain if he is called upon occasionally to give a quarter for a torch-light procession or a free barbecue." (Laughter.)

I must not preach to you this morning. I wish to say that we are very glad to have you here, and if it were not for the fact that I am limited to speak for the Chamber of Commerce, I would speak to you of other institutions of this city, about which I know more.

Dr. Charles Roberson: We will now listen to an address of welcome by the Hon. A. L. Brooks, who belongs to that class of professional gentlemen who rival the doctors in learning and in patriotism—the lawyers. I have the pleasure of introducing Hon. A. L. Brooks, our distinguished and efficient Solicitor. (Applause.)

The Hon. A. L. Brooks, address of welcome from city of Greensboro:

Mr. President, members of the Medical Society (and I should add, I believe, in our latter days, ladies of the Medical Society) of North Carolina:

I could not imagine, when I was invited to deliver an address of welcome on the part of the city, and allotted to follow Dr. McIver,

just why it was necessary to have a "sub," because Dr. McIver always does everything so well that I felt sure there would be nothing for me to say.

I am particularly embarrassed, also, on account of the fact that you have been forewarned against men of my profession, and I am told that there is a great distrust on the part of the people lest they may be tricked by lawyers. I have a few notes of what I shall say, and as it will be printed, there is no danger of your being misled or tricked, I trust.

I have the honor, my friends, to extend to you on behalf of the citizens of Greensboro, a cordial and hearty welcome to its privileges and to its opportunities. It is particularly significant that the representatives of the most progressive profession should meet this year in their annual session in the most progressive city in North Carolina. (Applause.)

I assure you that we appreciate the opportunity of entertaining you, and I trust that you may somewhat receive from mingling and commingling with us that pleasure which we so earnestly anticipate at your hands.

The physician, in all ages of the world, has been its benefactor and creditor, and howsoever rapid may have been the progress of civilization, always to the forefront in earnest achievement and progress has been found the physician. Whatever the ingenuity of man has been able to create or devise, if possible, has, by the physician, been used for the improvement of man's physical condition, and the alleviation of his pain. When, by his disobedience, man incurred the displeasure of his Maker, and was left a prey to disease, that day the demand for a healer of those diseases became imperative, and there, during the ever-changing vicissitudes of six thousand years, man has required a healer, some one, somehow, to minister to his diseased body. The savage in his ignorance has implicitly relied upon the herb doctor; the semi-civilized have found comfort and satisfaction from the administration of their quacks, while to the favored families of God have been vouchsafed the true physician and surgeon. It is needless for me to say, gentlemen, that to this latter class all of you belong. (Laughter.)

It is said that some of our twentieth century physicians have become so learned in the science of medicine that even when aroused in the wee small hours of the night that they can discern with unerring certainty the buzz of the festive anopheles and the joyous culex, or, in the absence of both, can charge a screen door with electricity so as to reproduce that delightful buzz. What a high calling to be assigned the position of doctor, throughout the land! To have committed to your protection, in the hours of sorest trial, those who are nearest to our hearts. To feel that the young mother, while in the

throes of inexpressible labor is gazing into your face and thinking of you as the preserver of her life and that of her offspring.

To the task of equipping yourself for this great work, and for the faithful performance of those duties, I am happy to say, as a member of another of the learned professions, that I believe history does not record your superiors. (Applause.)

Your Society of North Carolina, animated by a laudible ambition to have its membership composed of the highest order of intellect, have quietly established a law which requires all applicants for the practice of medicine to have devoted at least four years to preparatory work, to have a certain collegiate acquirement, and also present a certificate of good moral character. I believe this requirement is a just and wise recognition of assuring the membership of gentlemen learned in their profession, and possessing those high qualities of virtue, integrity and honor and devotion to duty which are so necessary to the successful and acceptable physician.

It may not be improper to remind you that you are not the only doctors in the city. Before you came we had a few, just a few—some fifty or fewer; a finer set of men you have never met. Greensboro is proud of her splendid physicians and surgeons. They have not only ministered to us in sickness, but have comforted us in health, and among their number are recorded some of the most prominent and progressive business men of the city of Greensboro. On their behalf, as well as that of the city, I extend to you all of the privileges of this splendid city. Enter in and enjoy fully the hospitality and the comforts which we may be able to afford. But, true to the profession to which I belong, I desire to subjoin as a precaution, that should any of your members, in passing throughout our city, meet up with any gentleman who apparently is past sixty years of age, that you will not Oslerize him! (Applause and laughter.)

Dr. Roberson: The address of welcome will now be responded to by Dr. L. B. McBrayer, one of Asheville's accomplished physicians and Past Grand Master of the Odd Fellows, and who, as an orator, stands perhaps at the top of the list of the North Carolina doctors.

Response to address of welcome—Dr. L. B. McBrayer, Asheville, N. C.:

Mr. Chairman: To me has been assigned the difficult, not to say impossible, task of expressing to you in words the emotion of our hearts at the kind, cordial and eloquent words of greeting that have just fallen from the lips of the learned Dr. McIver, and the fluent Mr. Brooks, speaking for the profession, the Chamber of Commerce

and the citizens of your city. And on behalf of the officers and members of the North Carolina State Medical Society, it is my pleasure, privilege and honor to say, we sincerely thank you.

We have heard it said that your city is called the Gate City to the Piedmont section, and we have understood that some of your enterprising real estate men, and perhaps others, claim that it is the Gate City to the world, and state, in substantiation of these claims, that the great Southern Railway connects it with the coast cities on both sides of the continent. Am sure I am not here to dispute these claims.

Again I have heard it said that your city is an educational centre. From the number of colleges and schools, from your excellent graded school system, from the fact that you were the first city in the State to vote a special tax for your public schools, from the large number of students who come here from all over this and from other States, and especially from the intelligence, culture and refinement of your citizens, we are prepared to believe that your city is an educational centre.

We have heard it claimed that the morals of your city are of a very high standard, and judging from the many church edifices and the beauty of their architecture, and from the fact that your people drink nothing but pure water, and from what we know of the personnel of your citizens, we are prepared to believe every word of it.

We have heard it claimed that your city is a manufacturing centre, and judging from the wood, iron, metal, cigar and tobacco, terra-cotta pipe, textile and many other kinds of factories seen on every hand, we are prepared to believe it.

From the number of your hospitals, and the renown of your physicians, we could easily believe your city a medical centre. We have heard it stated that your city is a convention city, and I am prepared to believe this from your excellent hotels and from the testimony of one of my Raleigh friends, who, when he heard me make that statement, winked his other eye and said to his colleague, "And that's no lie."

It is said that for a short time after the cruel devastations of the civil war had laid in waste the fortunes and property of your people, they were unable to build fine business blocks, great factories or palatial residences as they do to-day, but through it all they retained their love for the beautiful, and every yard became a flower-garden where rich colors, rare perfume and variegated form united to welcome and delight the visitor; and from that sad time to this glad day you have been called the city of flowers. And from the glad welcome nodded to us by the bowing daffodil, wafted to us by the morning zephyrs from the sweet-scented violets, and chanted to us by the ruby lips of the blushing rose, we are prepared to accord you the distinction of being called the city of flowers.

Yes, the name and fame of your fair city is being heralded throughout the length and breadth of this broad land of ours, and has even

been heard by that unknown people, the mountain whites, who dwell in that remote region, that sequestered nook called greater Asheville, and we were not surprised at the hearty welcome given us when we entered within your gates.

Of all the people in the world, I suppose the doctor receives the heartiest welcome. He it is who visits the home of the rich and the poor, the high and the low, the learned and the unlearned, the aristocrat and the peasant, the palace of kings and the mud hovel of the poorest, and receives the same glad welcome from them all. He receives the same glad welcome whether he be the bearer of glad tidings of great joy as he places the new-born babe in its mother's arms, or announces the fact that he has wrestled with the dark angel of death, and has, one by one, loosened his icy fingers, held him at bay, and finally driven him from the field; or whether it becomes his sad duty to announce that the last hope has flown, that medical science has been estopped, and that soon the loved one must obey the edict of God, where he says, "All that is born must die," and the bright spirit must soon wing its flight to the God who gave it.

In times of sickness, sorrow and distress, or in times of health, joy and festivities, he is the same welcome visitor to every home throughout the civilized world. We are not surprised, then, that this ever-alert city should be delighted to receive as its guest the intelligence of the medical profession of this grand old State as represented by the members of the North Carolina State Medical Society.

The rattle and din of your streets as your people go to and fro to the marts of business or on pleasure bent, the busy hum of your thousands of spindles and the machinery of your many factories, the shrill whistle of the locomotive as your forty-eight trains pass through here each day, the chattering of your merry school girls, the twittering of the birds on your leafy boughs, the lowing of the cattle on your pastures green, the ripple of the rills as they madly chase each other down your hills, make melody, and are but the echo of the glad welcome you have extended to us to-day.

The billowy clouds kiss your verdant landscape with their dewy lips, the angels stoop and leave their fragrant breath in the form of dewdrops on the morning flowers, the majestic sun as he raises his stately head above the eastern horizon, coquets with the dewdrops and converts them into dazzling diamonds. In fact, all those seem to have conspired together with you to give us a royal welcome and to make our stay pleasant.

Again, on behalf of the North Carolina State Medical Society, accept our thanks; and with my heart in my hand and my hand in yours, I pray God's richest blessing on the loyal, progressive medical fraternity, and the brave men and fair women of beautiful Greensboro.

Dr. Roberson: We will now listen to the Annual Address of the President, Dr. David T. Tayloe, of Washington, N. C. (Applause.)

Dr. Tayloe:

Ladies and Gentlemen, Fellow-Members of the North Carolina Medical Society:

It was my pleasing duty to be selected President of this organization; it is one, I assure you, I heartily appreciate. I realize the position which I now hold, though sufficient to satisfy the loftiest ambition, is surrounded by work and responsibility, but happily, however, in the performance of my new duties, I shall not be without the co-operation of my fellow-members of this organization. I tread in the footsteps of illustrious men. They have given to us a broad foundation upon which we now stand, and upon which we are destined to become the strongest medical profession of the South, and, as time rolls on, and the scheme of our new re-organization is perfected, it is not too much to hope that it will be for the betterment of the North Carolina Medical Society, and every member thereof.

Gentlemen, I have selected as the subject of my remarks, "The Growing Need of Hospitals."

(See President's Address, page 183.)

Dr. Booth: Mr. Chairman, I move that the President's Address be referred to the Committee on the President's Address.

Dr. Weaver: Mr. Chairman, I amend that motion by substituting: (The committee should be appointed by the House of Delegates) "that it be referred to a committee of the House of Delegates, who will report to that body on the merits of the address."

Chairman: Gentlemen, you have heard the motion. All opposed will make it known by saying No. All in favor by saying Aye. Motion carried.

President David T. Tayloe: The next paper on the programme is "Practice of Medicine—Dysentery," by Dr. W. H. H. Cobb, Jr., of Goldsboro.

(Dr. Cobb's paper was presented later in the session.)

Dr. Cobb being absent, we will take up the next paper, by Dr. John T. Burrus, High Point, on "Enteritis Follicularis, Symptoms and Therapy." (See index.)

THE PRESIDENT: Ladies and Gentlemen, I would like to say that these papers are open to the public. You may remain and hear them, if you wish.

DR. GEO. G. THOMAS: Mr. President, I rise to say that we have sitting with us to-day, Dr. Adolph Meyer, Professor of Pscychiatry of Cornell University, and Director of the Pathological Institute of the State of New York, situated on Ward's Island.

Dr. Meyer enjoys all of the benefits of birth in that Republic of Switzerland, which has devoted so much time and attention to the study of medicine. He has come to live among us. His particular business in America, growing out of his education, and his peculiar fitness therefor, is the teaching of the Superintendents of the Asylums or Hospitals for the Insane of New York. The great Institute over which he presides at Ward's Island, affording him an amount of clinical material the like of which I suppose is hardly equalled in this country, and not surpassed anywhere, has made Dr. Meyer a leader of thought and a teacher of unexcelled worth.

It is my pleasure, therefore, sir, to move that Dr. Meyer be asked to a seat in this meeting, and to partake, as far as he may choose, in the discussions.

PRESIDENT: Moved and seconded that Dr. Meyer shall be furnished with a seat in this convention, with full liberties. Carried.

DR. THOMAS: I beg to introduce Dr. Adolph Meyer.

DR. ADOLPH MEYER:

Allow me a word of thanks. It is decidedly a surprise to me, although I must say that after the experience I have had of two or three weeks' stay in this State, I need not be surprised at any such act of hospitality as even this great honor of being presented to you. (Applause.)

It is especially pleasant to me to think that I have the chance to say a few words to you, as I know that all of you belong to that class of medical men who are the closest to the families—closest to

the place where the mind is formed—where the mind gets its start, for good or for bad, and that among you are those in whom the future of our specialty must have its principal hope. If, so far, our specialty has necessarily been somewhat remote from your interests, I am positive, in a generation, if not before the generation has passed, mental diseases will mean more to the family physician.

I think that the experience of the last few years has shown that the medical profession has allowed a good many things to pass into the hands of irresponsible people which ought to have been kept from them, because it is hard to be familiar with mental disorders, and I have a full conviction that the future of the psychiatry largely depends on the family physician in the development of the mind and in the development of the disorders thereof, and it is with that in view that I like to shape my work to see it take such a form that the family physician will learn to take a special interest in these disorders before they reach the nearly irreparable stages. To my mind, only the family physician can help there.

It gives me pleasure to be among you, and I can only assure you that with the fresh memory of the institution of your excellent Dr. Murphy, and also with the feeling that I have that one of my best assistants has come from among you—Dr. G. H. Kirby, the son of one of the superintendents of this State—I will say that in your State probably there is as fine a beginning as anywhere, in the connection between the profession and those who are dealing especially with these disorders at present.

I thank you once more for the very unexpected honor.

THE PRESIDENT: Gentlemen, we will now have a discussion of Dr. Burrus' paper on "Enteritis Follicularis."

DISCUSSION.

DR. I. W. FAISON, of Charlotte: Mr. President and Gentlemen of the Society: I want to thank you, in the first place, Dr. Burrus, for presenting this subject before the medical men. It is a disease of very great importance to the medical men, just at this season of the year. I enjoyed the Doctor's paper very much. A good many things I agree with him in toto, and in a good many things I differ from him.

In discussing the subject of follicular enteritis, or follicular ileo-colitis, it becomes necessary to commence at the beginning. The disease itself never commences as follic-

ular ileo-colitis, but it is the second step of the pathological process.

There is a combination of conditions of the channel that produces such a state. It is true that unhygienic surroundings have much to do with it. It is the condition of the heat that produces the food that is bad. It is the heat of the summer-time that makes bacteria grow so rapidly, to so many millions within a few hours, and when this food goes in in bad condition, you have then a medium, the best in the world, for increasing a bacteria that means bad. You are well aware that all the bacteria developed do not mean harm at first. There are a good many bacteria in the intestinal canal that do no harm whatever, but when you get bacteria with bad food, you have a combination of conditions that want to do harm, and you must realize the fact that the disease is always in the food, first. That the condition of what has gone into the child's mouth is first wrong, and the disease starts in the contents of the gut first. It is the toxine of this condition that brings about vomiting, and it is nature, in her kind way, who is always ready to assist the doctor when the dysentery commences. It is nature opening the gates and turning loose the poison that will produce death. Now it is this condition doctors should teach their patients, above all things, that now is the time to call it off. If the doctor knows what is the trouble and what to do, that is the thing! There is now and then, of course, cases that will go on and produce these conditions before the doctor is called in, but, gentlemen, if the contents of the child's bowels are bad, before the mucus membrane has become involved, even with the high temperature, the anatomical condition has not changed, but you have the contents of the intestines bad, and then is the time, above all times, that the good doctor should be sent for. If a child is vomiting, wash out its stomach with a tube. It is an easy thing to do; the best thing to do, too—the only thing that a good doctor will do. If he does not do it, he is not a good doctor. The contents in that

stomach ought to come out, and the nearest way out is out through his mouth, and the easiest way out is through a tube —you want to get it out. But there is a fight going on within that little child, in the contents of that intestine, with the bacteria. The way to save that child at that time is to clear out that intestine. It does not make so much difference how you do it. Get it out. Wash out the stomach, and then you can put something in there that will be retained. Then wash out the bowel. In my experience, I have found that it is not always the best to use the long rectal tube. Why? Because the mucus membrane may have become congested; it is tender. The sensitive eudothelial layer is easily knocked off, and when you get it knocked off, you open the gate into the system for infection; therefore I do not now use the long tube; but I use the smallest and the shortest hard-rubber tube that I can buy, and I could wash out everything in the bowel, from the ileo coecal valve to the rectum, with it.

You can not discuss a disease like this in one hour, let alone five minutes. I would like to say something more, but I cannot say it in five minutes.

Dr. Weaver: Mr. President, I move that the gentleman be allowed to continue.

Dr. Faison: If you will put that child with his head down and hips elevated forty-five degrees angle, with a fountain syringe one to two feet above that child, you can fill his intestine, and he will not throw it off until you let him down, and when you do, the gateway is open, and what is in there comes out, and that is what you are after. You have done no harm. You have done good.

Now, it is the pathology of this disease we want to talk about, and if a man does not know the pathology, he is not fit to treat a child with follicular ileo-colitis.

Gentlemen, I say things strong, when I have things to say, and when I say too hard things I feel bad that I have said them. It has been my habit for twenty-five years to study diseases of children, and it is the pathology; it begins, as I

stated, in the contents of the intestine. I have already stated that the best day was the first day that the child becomes sick, to send for a doctor. I have tried to teach the mothers in my community that, and they send for me, and I want to say to you, gentlemen, that every child that has the least suspicion of dysentery should be treated as if he were seriously sick, for this is the time to cure him, and the little mounds, that the Doctor speaks of, all over this country bears out this statement. There would not be so many.

Now, you have the contents of this condition. They are first diseased. The first condition is in the contents, not in the mucosa of the intestine, but if the contents of the intestine is left there with that poisoned matter lying on the mucus membrane, it will be absorbed, and when it is absorbed, then you have anatomical lesion, and that is through the food, and through bacteria, and, with the rotting contents, will produce congestion of the bowels—then death. Then, the first condition is a bacterial condition of the mucus membrane of the intestine, and as that progresses, more catarrh, and more mucus and blood begin to come, and as that goes on, the next step is the subject of the paper that my friend on the left has brought before us, and that is ileo-colitis, a more serious form than the second, and when you get that, you have got something to do to cure. This is one of the most serious conditions that children have to do with at this season of the year. Now you have a catarrhal ulceration coming on, with ulcers, and with these you have a child on your hands from the 15th day of April to the 15th day of September, if you can keep him alive, and the way to make a diagnosis of that condition, gentlemen, is only under the microscopic field, and there you will find, if you watch the contents of the dejecta, the round cells from the follicles, and when you get that, you know you have follicular colitis to deal with, and not only that, but you know that you have got something that means a great deal to that child, to that mother, and to that doctor.

That is the pathological condition, and when you have got that, then you know something about what you have to do.

Gentlemen, in the treatment I usually confine myself to three remedies—bismuth, castor oil and opium, and let me add nitrate of silver. Gentlemen, when you commence with this first condition, when you clean out that bowel, and before that mucus membrane begins to shed, you have a bowel that is working like a tub full of eels, and what do you want to do? You want to stop that, and opium will stop it, and let your child get well: in a few days he will be running around, in the majority of cases. That is in the first step. It is not to the point where this paper starts. Because you are going to have this first. In all the cases, you are going to start right here. Then, in that condition, after you have cleaned out the bowels, you must use just opium enough, gentlemen, to control the peristalsis, and then, as he states to you, the great secret of success is the feeding, and if you can, with all those conditions, bring about a food that that child can digest, he will get well. If not, he will not get well, because he will starve to death unless he gets the food that he can digest. And the food question is just too big to commence to talk about. It would take an hour to tell how to feed one baby that has been sick, and I don't propose to take that time. The Doctor is absolutely right when he says from the first twenty-four hours every drop of milk should be withdrawn, because milk is the best food mentioned in cases of sick babies; albumen water is all right, but, gentlemen, don't fool with albumen too long. Albumen water may do to fool a child with a day or two, but you cannot fool his cells longer than that, and if you will study the cells just a little bit, you will find that those cells have to be fed, or he will die, and there is nothing in the albumen to feed them on, and they won't eat unless they get what they want. So, it takes three months to cure these cases.

There is one step further in ileo-colitis, the membranous form, which we won't mention, the most serious of them all.

But even before you get here, we can have enough of that poison to overpower the nervous system and kill a child in two or three days, in spite of everything, and I have had that to happen within the last ten days, where the toxine overpowered that system, so that the temperature could not be controlled, below 104 degrees, which was as low as the temperature could be brought from 106½ degrees, and there it hung for twenty-four hours, when he died.

Dr. Burrus: I would like to rise to correct the statement. The paper speaks of gastro enteritis, instead of follicular enteritis.

I thank Dr. Faison very kindly for the discussion of this paper, notwithstanding the discussion was further than the paper intended carrying.

The President: The next paper is by Dr. H. F. Long, of Statesville, on "Hymenolepsis Nana." Dr. Long was absent. (Paper read later—see index.)

Paper by Dr. Charles W. Mosley, of North Wilkesboro, on "Importance of Exact Diagnosis in Diseases of the Stomach." (See index.)

The President: Gentlemen, we will be glad to have any discussion on Dr. Mosley's paper. (No discussion.)

The President: The next paper is by Dr. W. O. Nisbet, of Charlotte, on "Early Diagnosis of Cancer of Stomach." (Absent.)

Dr. Faison: I move that we take a recess for dinner.

The President: Motion seconded. Recess is ordered for dinner. (1 o'clock P. M.)

Tuesday Afternoon, May 23rd.

Society called to order by the President.

Dr. H. B. Weaver's paper was called for, but the doctor was absent. The Society returned to the program of the morning session, and the members listened to the paper of Dr. W. H. H. Cobb, Jr., of Goldsboro, on "Dysentery." (See index.) No discussion.

Dr. Parrot: I desire to present the report of the State Board of Medical Examiners. Before presenting this report I have a resolution which I wish to read before the members of the North Carolina Medical Society. (See index.)

This resolution was referred to the House of Delegates. (See index.)

A report of the successful applicants for license was then read. (See index.)

The President: Gentlemen, I would like to announce that the street cars will leave the hotels at 8:00 o'clock to-night. Those who wish to go out to the Normal will be on hand at that time. We will hear the next paper from Dr. H. F. Long, of Statesville:

Dr. H. F. Long, of Statesville, on "Tænia Nana." (See index.)

The President: Any discussion of Dr. Long's paper?

DISCUSSION.

Dr. J. C. Walton: Mr. President, I have been very much interested in Dr. Long's paper, first, on account of its own intrinsic excellence; second, on account of the fact that I myself have been investigating, for the last two years, the subject of intestinal parasites; and another reason is that the patient is a relative of mine, and I have known something of the progress of the case—in fact, the day had been set for her to be operated on for appendicitis, and I was to be present at the operation.

I don't know that I can add anything to the paper at all, except to direct your attention more especially to one or two points that ought to be remembered. I think we are all prepared to say that it is a very rare case, and a very rare intestinal parasite, and yet it has been shown in the paper that it is very common. Hardly a case is known of the common tape-worm being so large, and yet, the bureau that investigated this case in Washington City say that they have

found sixteen cases of this tænia nana, where they found only two cases of the fœnia solium—the common tape-worm; and, although it would occur to us as a very rare disease, any of us might run up on it any day, because we have from five to eight chances to run up on this parasite to that of the common tape-worm. Another point in the case, namely, the male fern. The point to be emphasized is this, that the male fern must be fresh when used. This was brought out in my experience long ago. Several years ago a young man came to me and announced that he had a tape-worm. I asked him why he thought so, and he said he had seen segments of it, and was certain of the fact. He had been living out in Chicago, and had been eating a lot of rare beef, and I was prepared to believe his statement, and got ready to treat him. I sent away and got, as I supposed, a fresh article of male fern, and went through all the particulars of fasting, etc., in order to be certain to get results, but I failed and lost sight of the patient for a while. Finally he came up and reported that he had it. I asked him how he got it. He said he sent out West somewhere and some quack doctor sent him some medicine and he took it and it did the work. My failure, in my opinion, was due to the failure of a male fern to do its work.

Another point I think it teaches is this—and we could not expect Doctor Long to emphasize it, because he operates on appendicitis every day, but I am in a position to emphasize that fact, and that is—it is not every case where we have pain on the right side of the abdomen that it is a case of appendicitis and must be operated on.

Dr. Nisbet's paper was next called for, on "Early Diagnosis of Cancer of Stomach," but he was absent.

Next paper, "Pneumonia from a Personal View-point," by Dr. J. B. Wright, of Granite Falls. (Not present—presented later—see index.)

"Some Practical Observations on Pneumonia and its Complications," Dr. H. M. McBryde, Milton. (Not present—presented later—see index.)

Dr. Wade H. Anderson, of Wilson, on "Pneumonia—Practical Suggestions as to Therapeutics." (See index.)

No discussion.

Vice-President Julian: The next paper is by Dr. Chas. B. McAnally, of Madison, on "Influenza—Its Sequalae and Therapeutics." (See index.)

DISCUSSION.

Dr. J. C. Walton: I think the paper a very important one. I don't know of any disease which is more disastrous. He says that this might seem a little paradoxical, but that the vigorous and the young all recover, and the old and infirm nearly all die, and the peculiarity of the disease is that the depression is out of all proportion to the local symptoms. My experience with the disease is that alcohol is all that is necessary in its treatment.

Dr. I. W. Faison: In the first place, I want to thank the Doctor for bringing up this subject. It is one of the diseases of North Carolina at the present time. In classifying, I understood Dr. McAnally to say he understood it to be a contagious disease. In that I want to take issue. I don't think that influenza is a contagious disease at all. I don't think it belongs to that class of diseases. It is true that it is an infectious disease, due to the specific form of the germ, but I think it belongs to the classification of infectious diseases known as the "communicable infectious." It is not contagious, as I speak of contagion, in any sense of the word. Now, that is all that I wanted to differ from the Doctor in, and I want to differ just a little in the usages of stimulants. I don't think, as a rule, that doctors should prescribe much whiskey (applause) for influenza. Children don't need it. Middle-aged people, as he says, get well; so, if you are going to give it, restrict it to the old people. You give it in that disease and in this disease, and it is a pathway to the use of alcohol, which is doing its share of the harm within this coun-

try to-day. I treat I don't know how many cases of influenza yearly. I think, gentlemen, that I can say safely that I have not prescribed a single drop of whiskey, for a single case of influenza, in eight years. I think, furthermore, that I am willing to compare notes as to the recovery, with any man who gives alcohol in its treatment. Now, I do not want to be considered as fool enough to say that I would not give it under any circumstances, but in the general run of an epidemic of grip the cases are few and far between that I would give it, because there are other things that will answer every purpose and do no harm to the man, and the stimulants with me are strychnia and camphor. The best tonic for these people is the bed. Put a man in the bed for influenza and his heart will hold up all right without your whiskey. Now, there are some cases in which I unhesitatingly give whiskey, but I have not seen them in eight years, and, as I say, if you take grip out of North Carolina, I expect some of us would have to go to pulling a line over some mule to make a living; but it was the special issue that I wanted to make as to calling it an infectious disease. There are plenty of authorities to take the ground that it is contagious, but I do not think that it will be a long time before the authorities will recant.

Dr. Charles B. McAnally: As regards the contagiousness of the disease, its communication and contagiousness are recognized by all. If you want to rule the word "contagiousness" to a narrow channel, I have no objection.

As regards the treatment: I profess to be a general practitioner, a man who uses all the drugs at his command. I am not afraid of morphine, when it is necessary. I am not afraid of whiskey, when it is necessary, and during the last fifteen years I have, perhaps, treated over five hundred cases of epidemic catarrh. I use in almost all of the serious cases whiskey or brandy. So far as I know, I have not chargeable to my credit, or to my discredit, a single case of habitual drunkard or drunkenness from prescribing that, neither a single case of a morphine fiend, and I would recommend morphine just as quickly as whiskey.

In regard to the uses and the action of the drug: The Doctor says, "Use strychnia." I agree with him fully, but I can not get the same action from strychnia as I do from whiskey or brandy. I get a soothing, quieting, stimulating effect from alcohol, brandy or whiskey—whatever you choose to call it—that I can not get from those drugs, and from my own experience I expect to continue the use of it, because I know it does good. The Doctor may have had good results, I don't doubt it; but I think he would be handicapped if he dropped a reliable drug, and whiskey is a drug. I don't believe in drinking whiskey as a beverage, but I do believe in using it as a drug. It is one of the best I know of, used right. I say any man who drops any of the reliable drugs handicaps himself to that extent.

The paper was called for by Dr. McKenzie, of Salisbury, on "The Effects of Influenza Upon the Nervous System." The Doctor was absent.

Paper by Dr. Wm. R. Kirk, of Hendersonville, on "Early Diagnosis of Pulmonary Tuberculosis." Doctor absent.

Paper read by Dr. J. Thomas Wright, of Winston, on "Neurasthenia." (See index.)

Paper called for by Dr. J. Allison Hodges, of Richmond. Subject, "The Systematic Use of Graduated Work in the Treatment of Simple Neurasthenia." The Doctor absent.

Vice-President Julian: On account of the absence of some of the doctors who were to read papers, we will hear the paper of Dr. Fred. K. Cooke, of Wake Forest, on "The Duodenal Ulcer—Its Etiology, Symptomatology, Prognosis and Treatment." (See index.)

(No discussion.)

Paper read by Dr. Charles Roberson, on "The Modification of Cow's Milk in Infant Feeding." (See index.)

DISCUSSION.

Dr. J. T. Burrus: I think we all appreciate the importance of this very valuable paper, and believe that we should

stimulate the determination on the part of the medical profession to hang out the red light at this, one of the most dangerous points in the treatment and the management of any disease or malady. I believe that we, as physicians, owe it to the State to study with diligence this subject of artificially feeding the babies. I believe that we owe it to ourselves to familiarize ourselves with this important subject, of which I know of nothing that demands or should demand greater thought. It would seem that we are too much in the habit of going into the sick chamber, where the little infant is infected by myriads of pathogenic bacteria—that we are too much in the habit of going in there and leaving no instructions whatever for the feeding of the child. That the little one becomes very much jeopardized,—that the treatment of these children and the management of them becomes one of those subjects which we should endeavor to stimulate.

I am very glad, indeed, to have listened to such a paper from the gentleman from Greensboro.

Dr. Charles Roberson: I just want to say that Dr. Joe Graham, of Raleigh, is going to read a paper on this same subject (I did not know it until after I had prepared my paper), and I left off that part in my paper about the purer milk supply.

I want every man here to listen to that paper. He is going to speak on what we can do to make the milk supply purer. I think he has been working on that Milk Commission business at Raleigh. At our Guilford County Society Meeting we are going to appoint a committee to look into this matter, and see if we can not establish a "Milk Commission" for our county.

Paper read, then, by Dr. O. C. Daniels, of Oriental, on "Malarial Hæmoglobinura." (See index.)

Dr. J. M. Parrott: I was about to remark, Mr. President, that it has been my pleasure and profit to give quite a good deal of my time to the study of malarial hæmoglobinura. The text-books and the authorities on medicine give us but very

little light on the subject, and the light they usually give us—from the standpoint of a hard-headed country doctor like myself—is almost entirely erroneous. The average text-book treatment of this disease or complication is based upon the imagination of the writer, in my judgment. I have seen text-books the statements in which on Malarial Hæmoglobinura were entirely erroneous; that, if followed, would lead one to the diagnosis of yellow fever. Mark the symptoms usually laid down in the text-books. First, in a rapid rise of temperature; third day a rapid fall of pulse—nothing more characteristic of yellow fever, and also often under certain circumstances of yellow chills.

I arise, Mr. President, to call the attention of the medical profession to these facts. Those of us who have fought this disease in the Eastern part of this State, have done so upon our own resources, consequently at first we lost in many of our battles. Now since we have studied this freak in medicine we do very much better; are very much more successful.

Dr. Daniels' paper, to me, was an exceedingly interesting one, because it recalled to me work which I have done along this line, as well as I could, for several years. I speak offhand concerning the matter, and I speak somewhat at random, because it has been several years since I have given this subject much thought. For the past four years we have had practically no "yellow chills" in my section. However, according to the history of events, the time is rapidly approaching when I will again be called upon to treat the cases of "yellow chills." I prefer the term "yellow chills" because I am accustomed to that. I have never in my life seen a case of Malaria Hæmaturia. The theory of the production of Malarial Hæmoglobinura is contrary to the idea of this being a hæmaturia. It is not a true hemorrhage. The pathology of the disease—of malaria—does not bear out the assertion that there is malarial hæmaturia. There is a pathological change due to quinine poison, which is, in my judgment, correct to denominate as a case of quinine hæmaturia. That

pathological condition, without question, is the condition to which Koch referred when he made that famous report of the so-called "Black-water Disease," which he investigated in the jungles of Africa a few years ago. They were not cases of Malarias Hæmoglobinura, unless his report upon those cases has been falsified. The symptoms which he reported do not correspond to the symptoms known as Malaria Hæmoglobinura in Eastern North Carolina.

From a clinical standpoint, as well as therapeutically, I have divided the subject into two groups; first, the class in which quinine should be given, and, secondly, the class in which quinine should not be given. For the sake of nomenclature, I have divided them into two classes. First, we have as the variety known as asthenic, and second group as sthenic. I do not believe the experience of Dr. Daniels himself will bear out the classification which he has used. I have seen cases which began as a remittent type, and ended as intermittent type, and *vice versa*. For the benefit of the general practitioner, who does not have the aid of the microscope and other modern paraphernalia, the subject must be classified in such a way as we can best get at it. In the first place, I desire to call your attention to the symptoms of what I call the asthenic malarial hæmoglobinura,—that which Dr. Daniels classes as a "continued variety." They begin, first, in patients who have a decided malarial cochesio. The disease runs to a very low type. The patient is wonderfully depressed at the very beginning, and is very restless, tossing from one side of the bed to the other. That type is typhoid in its character—the asthenic variety.

The second type I have denominated the sthenic. It begins first (not always, but usually) with a chill,—one, two or three chills,—then the passage of the so-called bloody urine. High temperature—105, 106—and rapidly bounding pulse. Now, from a clinical standpoint, the sthenic variety should be treated by administering quinine within the first seventy-two hours. Sometimes quinine should be administered as late as eighty or ninety hours afterwards, but usually

within the first seventy-two hours the patient should be treated with quinine in very moderate doses.

My favorite way of treating the asthenic variety is along the line of expectancy (saline infusions, calomel, etc.), without the administration of quinine. One particular feature of the Doctor's treatment struck me very forcibly, and that, in the future, I shall adopt, when I am forced to use quinine in the sthenic variety. That is, by inunction. The reason I prefer this method is because the patient does not absorb it.

The reason why I say the quinine should be administered within the first seventy-two hours is because only during that time can the malarial organism be found in the blood. After seventy-two hours the malarial organization disappears. It is not present, so far as I have been able to find, in the human system. It disappears, in my judgment, because of its destruction of the free hemoglobin which is found in the blood, on account of the disintegration of the red blood cells; that acts as a malarial antidote. In the asthenic variety, when the patient is almost in a typhoid state, it is foolhardy to give quinine, unless it be an exceedingly rare case, which is very, very seldom seen, when the presence of malarial organism can be demonstrated by the use of the microscope during the first twenty-four hours of the disease. In the malarial hemoglobinura, in my judgment, the trouble lies, not in the excessive amount of the malarial organism found in the blood, but in the fact that the system is already "run down." We have here a condition of below par, the liver cells working at a very low ebb, the free hemoglobin is not converted in its proper products by the liver, and consequently it is thrown off in large quantities as it exists in the blood; it goes to the kidneys, which have already been overworked. Therefore, any man who has a patient suffering from a decided and pronounced malaria cachexia, need never be surprised to find the case, with an ordinary malarial infection, develop a case of "yellow chills." A large number of red blood cells rapidly disintegrate and other debris (?) is thrown into the circulation.

It is poisonous to the system, it must be thrown off, and in doing so the kidneys are clogged, the liver is overworked, and the patient succumbs to attacks of hæmoglobinura. At one time I thought I had discovered a new variety of malaria organism that produced this disease, but I found, in investigating this fact thoroughly that this was not true, and my experience has demonstrated the fact that the so-called yellow chill is nothing but the "same old coon with just one more ring around his tail." (Applause.)

Dr. N. P. Coppedge: Mr. Chairman, I agree with what the gentlemen have said about the cure for yellow chills, but there is one good remedy that has not been mentioned, and I have used it to good advantage, and that is sodium hyposulphite. My method of treating yellow chills is to give an initial dose of calomel and almost immediately commence with heavy doses of sodium, and also frequent doses of quinine. You see I commence giving quinine. The cases in which I have used that treatment have gotten along just all right. I merely mention that because I have not heard anything said about it up to this time. It is recommended by Hare in his latest edition of his work on Therapeutics. I have not heard any one say anything against the treatment, and think it must be good.

Dr. McMillan: I have been the unwilling subject of this malady four times myself, and if there is any disease that I have thought about it is hemorrhagic fever. The first time I was afflicted with this malady was when I was quite a boy,—before the profession had begun to study the disease. I was a victim, and, as usual, had taken quinine, and afterwards had a very copious hæmoglobinuria. My mother had never heard of it before. She immediately told me to notice my symptoms. The next day it passed away. That was the end of it. I am satisfied if the physician had been sent for I would not have been living to tell this tale.

The next case of hemorrhagic fever I had was after I was a practicing physician. I was taken one night with what

seemed to be a congestive chill. The pain went down into my bowels. My brother was present in the house, and was a practicing physician also. He had had experience in all kinds of fever. He immediately filled me full of quinine, and by next morning at ten o'clock I was full of quinine—I had 60 grains in me. The hæmoglobinuria at once began, and I believe I am now living to tell the tale because my stomach refused to further absorb the large doses of quinine exhibited.

The next year I had another attack. Took the quinine. Was practicing medicine and had a call. Thought I would answer it, any way, but finally, after having a number of passages of characteristic urine, I stayed at home. My brother began treating me with quinine. That evening it cleared up slightly. Next day it appeared again after moving exhibition of quinine. I said, "Look here, every dose of that quinine makes me worse." "Yes," he said, "I won't give you any more." From that day to this I will say he has never given another grain of quinine in hæmoglobinuria, and with almost uniform success in his cases.

The next case I had was after I moved away from my brother to another city. I was taken with a chill; took the quinine. Was in the office all day and practiced medicine. When I went to bed I had a nervous chill. Being impressed with the idea that this chill was malaria and nothing else, I said, "I reckon I had better take a little bit of quinine," and took it, and also a large dose of calomel. The next day I was very sick. I pulled through, in spite of the quinine, I think. So that was my personal experience in hemorrhagic fever. Still, impressed with the idea that the trouble was malarial in essence, I could not bring myself to break away entirely from the quinine, but continued to give it; never, however, over five grains at one dose, and then hydro-bromate under the skin. The last two cases I treated I cut loose from quinine, recollecting the fact that I had never seen a case of hemorrhagic fever that had not taken, previous to its out-

break, an anti-malarial dose of quinine, and I argued, if quinine was going to do any good, why hadn't it done it? The last two cases I treated I gave none at all, and the patient was practically well in twenty-four hours. Gave a little arsenic, a little sodium phosphate and a little calomel.

Dr. McMullan: During active stage of the trouble quinine, *certainly the sulphate by stomach* will produce death of red corpuscles, increase of debris, choking of uriniferous tubular, suppression of urine and death.

Dr. Cyrus Thompson: Mr. President, I have not had much experience, but I have seen more or less hemorrhagic fever for a long number of years, if you will admit that I am as old as that; and up to a year or so ago I had formulated in my mind that light cases of hemorrhagic fever got well and severe cases died, whether they were treated or untreated. I don't know but that that view of the case is correct, even now. Certain it is that there is nothing at all that afflicts us in the East that is so dreadful in the eye of the average man, as an attack of hemorrhagic fever. I remember distinctly last Fall a neighbor of mine, living across the street, sent for me about midnight, and when I went in he said: "Doctor, I am gone, old fellow, I have had a hemorrhage." That is the sort of panic that it puts upon every man that has it. The past season I have had half a dozen cases, and only half a dozen, and all got well. So far as the treatment is concerned, I am inclined to agree with Dr. McMullan. I have never given a single case of hemorrhagic fever quinine after I diagnosed it as hemorrhagic fever, and I will state further than that, I have never seen the necessity of giving quinine. When the hemorrhage appeared and cleared up, the fever was practically at an end; and I think that would be the experience pretty generally, if a man would withhold his quinine and consider his case. I think, in my experience, that brunettes are more liable to the malady than blondes. I think persons of the uric acid diathesis are more liable to the disease than those who are not subjects of this condition.

Men with sluggish, torpid livers, heavy feeders, are inclined to have it. I don't think it makes any difference whether a man has had previous attacks of malaria or not. If he has malaria, and a sluggish, torpid liver, and, as Dr. McMullan says, you put quinine into him first, you may get your hæmoglobinuria. Every case that I had the past season had been dosed heavily with quinine. Two of them occurred in my own household; therefore I say I don't give any quinine after I have the hemorrhage. I don't bother myself about the amount of it, or the long continuance, but my only concern is to keep the kidneys active. You want the debris to pass off. I have repeatedly dry-cupped over the kidneys. I give all the hot water that the patient will drink, and give salt solutions under the skin, if there is a failure of urinary secretion. For restlessness I give whatever morphine and atropia may be necessary. Dr. Daniels has said that he would give acetate of potash. I have never seen a patient that could take this. Except the bi-tartrate, I have found but one form of potash that the patient could take at all—the bi-carbonate. They will retain corn-silk—a pretty good diuretic. I give calomel, of course, and keep on giving it. I treat my patient just as closely as I can. I pray for him to get well, and sometimes I think that the Lord and myself do right good work.

Dr. Coppedge has said that he would give the hypo-sulphite of soda. Give it to him; but he could not keep it on his stomach. All soda salts are nauseous, and nausea is always present. He could not keep it if he wasn't sick. I don't think it worth while to give quinine. I don't know of a practitioner in my county that gives it, and you have better success, certainly, when you don't use it than when you do. Give all the calomel, all the diuretics, all the saline solutions, and all the morphine that is necessary. After you treat him just as well as you can and he makes a recovery, he will possibly have it again the same season.

Dr. Coppedge: Mr. Chairman, I want to say to the Doctor that what he says does not tally with my experience. What he said about hyposulphite of soda does not tally with my experience.

Dr. O. C. Daniel: Gentlemen, in cases I have treated I was very glad that I had used quinine. As to Dr. Parrot's statement, "If you get your patient within twenty-four hours he will be cured," you will not find a case of malarial hæmoglobinura within twenty-four hours after he has had a chill. He will be weak and thirsty, in ninety-nine per cent of the cases, fever of the intermittent type. I have seen cases of the intermittent type that had a chill for three days. He would have an appearance of fever for three days. When I gave him the quinine treatment he did not have the chills. If the malarial parasite was not there, he would not have had this chill. I made no microscopic examination, because they were children, but the quinine evidently kept off the third chill, or the second chill, and, as to rubbing quinine into the skin, I instituted that practice. I would not hesitate to give it hypodermically, but don't care to ruin a man's arm, and it produces headache given that way, and ringing of the ears, and if does not have action that way, I don't see why it should produce the ringing of the ears and headache.

About the intermittent type: I have been very careful in my treatment as to that. Dr. Attmore, of Pamlico County, who will substantiate my writings, has seen as many cases of malarial hæmoglobinura as any doctor in North Carolina. He has been a doctor for thirty years. Since I have been there—two years—there have been sixteen cases in the county. Of the sixteen cases I treated ten, without the loss of one. The eleventh case I was called in twenty-four hours after he had had a chill. The bowels had not moved in two days. The fellow died. That was not due to the quinine. If you do not give the quinine your patient will have a chill the second day, with a return of the hemoglobinuria with increased severity. If your first chill causes enough congestion to stop the kidneys from acting, your patient will die. If

you keep off the second chill, then your patient has a chance for recovery. What the first chill has done, I can not help; but I am going to keep off my second chill, and if you don't keep off the second chill you are going to lose them. I have seen a doctor treat a patient who had five chills. If the doctor had given him quinine, he would not have had it. As to giving quinine by mouth, it won't absorb. I have seen it given thirty-six hours before, and there is no absorption, and it clogs the liver and causes an increase of what you are trying to stop.

Dr. Daniels, closing the discussion, says:

Gentlemen:—What I have written about this has not been copied from text-books, but it is principally what I have seen.

As to Dr. Parrott's division into *"sthenic* and *asthenic,"* if you do not see your patient in the first twenty-four hours you will never see a *sthenic case,* all will be asthenic (will be weak and with a thready pulse).

As to my division into intermittent, remittent and pernicious, I do not see how any other division can be made from an etiological, pathological and clinical standpoint. I have been very careful along this line, and am certain Dr. G. S. Attmore, of my county, can bear me out in this statement, as I am sure he has seen as many cases as any man in North Carolina.

I have seen cases of the intermittent variety that had chills for three days previous, and I am sure would have had a chill the next day had I not given quinine hypodermically. If the malarial parasite had not been there he would not have had these chills.

Out of about eighteen cases in my county in the last two years, I have treated ten of my own without the loss of one. The eleventh case I was called in consultation twenty-four hours after the first chill. The bowels had not moved in two days. The fellow died. This was not due to quinine, but to the severity of the infection. If you do not give quinine your patient will have a second chill with a return of the hemoglobin with increased severity.

If your first chill sets free enough hemoglobin to stop the kidneys from acting, your patient will die. If you keep off the second chill, your patient has a chance for recovery. What the first chill has done I can not help, but I am going to keep off the second chill, and if you don't keep off the second chill you are going to lose a large per cent of them.

I know of a case that the patient had four (4) chills after the doctor began treating it, and had he given quinine he would not have had these chills.

About inunctions of quinine: I instituted that to save my patients from sore arm. It produces restlessness, headache and ringing in the ears, so I know it is absorbed and acts.

Dr. Way: Mr. Chairman, I note present in the hall this evening a gentleman distinguished as a private citizen, as a surgeon, as a gentleman, a gentleman who has, as his subordinate officials a number of the active working members of this Society. I refer to Dr. W. A. Applegate, of Chattanooga, Tenn., the Chief Surgeon of the Southern Railway, whom I take pleasure in introducing to you, and ask that you extend to him the courtesies of this session and the privileges of debate.

Dr. Applegate: Gentlemen of the North Carolina State Medical Society, it affords me great pleasure to be with you. I promised Dr. Way recently that I would try to come over to this meeting, and I always try to fulfill my promises, and I am here.

As to taking part in the debate, I think many of the gentlemen here are more capable of doing that than I am, but I will take pleasure in listening to it, at least.

I thank you for the courtesy extended to me.

Paper then called for by Dr. R. V. Brawley, of Salisbury, but the Doctor was absent. (Paper presented later.)

Dr. Jenning's paper on "Life Insurance Examinations" called for, and the Doctor's absence noted.

Dr. Knox: I would like to make one suggestion. There is a proposition now before the House of Delegates that the

State Society appoint a committee to prepare resolutions in regard to the joint combined action of life insurance companies over the country, looking to their adoption by the county societies, and one reason why action was postponed was in order to hear this paper of Dr. Denning, so that we might have before us all the light on that question. I hope, unless there is some good reason for adjourning, we will hear that paper.

VICE-PRESIDENT: Motion to adjourn is withdrawn.

Dr. Hicks, of Dunn, then read Dr. O. L. Denning's paper, entitled "Life Insurance Examinations—The Duties and Responsibilities of all Concerned."

DR. A. J. CROWELL, of Charlotte: I don't know when I have heard a paper that I enjoyed hearing so much as this paper. I am glad that the medical profession of the State is taking up this question. I have longed, ever since they commenced cutting down the fees in our State, and throughout the United States, to see the medical men stand together and say, "We set our prices upon our own work." I am glad to say that we do not study medicine for the purpose of making life insurance examinations, but for the benefit of humanity; to alleviate suffering humanity. When this fee was first cut from five to three dollars, I had a number of old-line insurance companies at that time to examine for. I was doing a general practice then. I will say I am not doing life insurance examinations now, as my work is a special line, and I gave that up, but at that time I did have a number. They wrote me that their fees had been reduced from five to three dollars. Without consulting any Society, or anybody, I told them that my fees were five dollars; if they wanted a cheaper man, they could accept my resignation; that I did not make these examinations for less than five dollars. They had a little trouble in getting the work done by members of the Rowan County Medical Society. I did not know until I left there that they stood together and refused to make these examinations for less than five dollars. I don't know what

they are doing to-day. I will say if there is a county in North Carolina that stands together, it is the medical profession of Rowan County, and I am glad to see this question taken up by the medical profession of the State of North Carolina.

Instead of companies dictating prices, I should think that we should say what we are worth. If they can squeeze us down from $5 to $3, they will soon be squeezing us down to one dollar, and the only way to protect ourselves is to stand together and charge a reasonable fee and do the work for no less.

Vice-President: I will make the announcement that the meeting will be resumed to-night at the State Normal and Industrial College, where we will hear the Annual Oration, by Dr. Ben. K. Hays, and the Annual Essay, by Dr. John Hill Tucker.

Tuesday Evening, May 23d.

The Society was called to order in the Auditorium of the State Normal College for Women by Dr. David T. Tayloe, the President, at 8:30 p. m. The President then introduced Dr. Ben. K. Hays, of Oxford, who delivered the Annual Oration. Subject, "The Influence of Psychic Phenomena Upon the History of Medicine." (See index.)

The Vice-President: I now introduce to you our Annual Essayist, Dr. John Hill Tucker, of Henderson.

Dr. Tucker then delivered the Annual Essay, upon "The Physician and the Public." (See index.)

Dr. McIver: Mr. President, being informed by you that this closes the programme for the evening so far as the Medical Society is concerned, I wish to announce that in a few minutes you will be invited to go to the Spencer Building, beyond the bridge, to a reception, where you will see more of the students and of the faculty of this institution.

I regret exceedingly that every student could not have

heard the oration and the address delivered here, but we felt that we ought not to fill this hall, when the physicians and the public wanted to come here to hear these papers, but we will go over to the other building, where you will have an opportunity of seeing the students.

As there is a large number of physicians here who know a large number of these students, I would appreciate it if you would write, while the music is going on, now, the names of any of the students you may wish to see when you get to the next building, and the marshals will take up that slip of paper, and we will find them and have them in the center of that building,—in the larger part of it. So, if you will write those names down now, while this music is going on, they will be there.

Reception.

Wednesday Morning, May 24th.

Society called to order at 9:30 by the President.

Dr. H. B. Weaver, of Asheville, read the first paper, on "Pneumonia." (See index.)

Dr. Crowell: Mr. President, I notice Dr. Applegate is in the audience, and he tells me that he will be compelled to get away on No. 30, I believe, this morning, and he would like to read his paper this morning. It does not come on the programme at this time, but in view of the fact that he will have to leave the city, I move that he be allowed to read his paper.

The President: We would be glad to hear from Dr. Applegate, but I regret very much that several of the doctors have made the same request as Dr. Crowell and been refused, and we will have to stick to the programme.

Dr. Russell: Mr. President, we have with us this morning a physician who is no stranger to many of you, and whose valuable contributions to our meetings can be recalled by many. I refer to Dr. Guy L. Hunner, of Baltimore, and I

would like to move that Dr. Hunner be accorded the privileges of the floor.

THE PRESIDENT: Moved and seconded that Dr. Hunner be accorded the privileges of the floor. We will be glad to hear from you, sir.

The next paper called for was by Dr. J. A. Walton, of Danville, on "Physical Therapeutics." But the Doctor was absent. (Paper read later—see index.)

DR. WILSON: I would like to say that we have with us to-day Dr. W. L. Robinson, of Danville, Va., and I desire to move, sir, that we extend the privileges of the floor to Dr. Robinson.

It was then moved that Dr. Robinson be extended the privileges of the floor. (Dr. Way, the Secretary, called attention to the fact that Dr. Robinson was and had been for a number of years an honorary member of this Society, and expressed his pleasure in seeing him present.)

DR. WILSON: Mr. President, I would like to say that Dr. Robinson is a colleague of mine, and I would be glad to hear him discuss the paper read this morning.

DR. W. L. ROBINSON, of Danville, Va.: Gentlemen, I do not feel that I am an entire stranger to this Society, being an honorary member, through your courtesy, for many years. I suppose that I would have had a right to the floor under those conditions, but would have felt a delicacy, nevertheless.

I thank you for the privilege of discussing this paper. I feel that it is a field into which we ought to explore more thoroughly—one in which I have been deeply interested.

I have had some clinical operations along this line. I will first go back to the Doctor's suggestion about hydro-therapy. Many years ago, on my return from New York, I found my mother a nervous wreck, unable to sleep or digest the simplest diet, liquid or otherwise. I took her to the Hot Springs of Virginia, and under the massage over the lower spine from the water fall of five feet, she could, in five days, sleep and eat with comfort.

I noticed on the seashore that those parties who complained of constipation, torpid livers, and that character of distress, were materially benefited, especially that class who stood among the breakers and were pummeled over the liver by the veritable water massage. Those things suggested, years ago, the use of water massage, to my mind, and I have almost been called a water fiend, from the fact that I have simply poured the hot water, sometimes from a pitcher, holding it four or five feet in the air, in large quantities over the part diseased, and it is astonishing the relief it gives, the improved circulation to the part, and the restoration to the normal function.

I would call your attention to the use of the hot bath in meningitis. I don't mean simply the dipping the patient in a bath, but I mean a continuous bath, as I used it years ago for twelve hours consecutively, with entire relief to the patient. I just call your attention to these facts. I do not want to go into description of it, because I do not want to take your time.

In regard to the X-ray machine: There are one or two points to which I wish to direct your attention. That intractable malady that we contend with ineffecutally so often, neurasthenia, in every case in which I have used it, after everything else had been tried (and I will be frank to say I have only had it in two cases), the only two that have fallen under my observation since that time have been entirely relieved by the X-ray machine, along spine.

Now, again, in regard to the light: That is a new field; one in which I have not had much experience; on which I can not express much opinion, but there has recently come under my observation an electric lamp of 500 C. P. In the few cases of rheumatic joints, neuralgia, earache, etc., in which I have tried it, the relief was astonishing and prompt.

I thank you for your kindness.

PRESIDENT: The next paper is the Chairman's Report, by Dr. Lynn McIver, of Sanford, on "Physiology and Chemistry." No discussion. (See index.)

Paper then read by Dr. W. J. Martin, of Davidson, on "The Bearing of the Medical Fraternity to Chemistry—What It Is, What It Should Be." No discussion. (See index.)

Paper read by Dr. J. W. Peacock, of Thomasville, on "Edible and Poisonous Fungi in North Carolina." (See index.)

The President then requested the doctors who had not registered, to do so, as the Special Committee wanted to know just how many they had to entertain that night.

DR. R. H. WHITEHEAD: Mr. President, I hardly feel able to discuss Dr. Peacock's paper, because it deals with a subject with which I am ignorant, but I don't think a work of that character should be allowed to pass without the members of our Society congratulating him upon doing work of such a high character. Such a paper is rather difficult of comprehension, to hear it read, but if one sits down to study this paper it will be found of great value, I am sure.

Paper read by Dr. M. Eugene Street, of Glendon, on "The Internal Secretions." (See index.) No discussion.

Paper called for by Dr. W. C. Steele, of Mount Olive. Subject, "The Vital Importance of Physiologic Elimination by the Kidneys." (Absent.)

Paper read by Dr. I. W. Faison, of Charlotte, on Metabolism." (See index.) No discussion.

DR. MCMULLAN: Mr. Chairman, I move that the programme be suspended until the Secretary have opportunity to present a matter to the Society which every physician in the State is interested in, and which we would like to have discussed by as many physicians as we can. Therefore, we ask for the suspension of the programme until this matter can be presented and disposed of.

The motion to suspend the programme until after this discussion was then carried, and the President requested the

Secretary to make the report from the House of Delegates on the Insurance Examination Resolutions, which he did. (See index.)

THE PRESIDENT: I move the adoption of this report by this Society.

The motion was carried.

DR. A. W. KNOX: Mr. President, I think it is an exceedingly important matter that every member of the Society should have an opportunity to discuss these resolutions, before the final action of the Society, and if there be any reasonable ground of objection, every member shall have an opportunity to state his objections. The resolution, if adopted, will be emphasized greatly by unanimity of action, and so, with all respect to the Chair, noticing that he failed to call for discussions before putting them to the vote, I would move that we have a reconsideration of the motion. I think we ought to be careful not to have the members feel that any resolution is passed, either accidentally or designedly, without free discussion.

THE PRESIDENT: Will be glad to have the motions of the house.

A motion was then made to reconsider and re-open the matter for discussion. Carried.

DR. J. A. BURROUGHS: Mr. Chairman, I take pleasure in seconding that motion. I think this matter ought to be freely discussed, and not only that the members ought to have an opportunity to raise any objection, but to ask for any explanation, and, as a member of the committee, I wish to say that we will be glad to give them any information we have bearing upon the question. We have considered it very carefully. It is merely suggestive to the County Societies, and we hope it will amount to a concerted action upon the part of all the doctors of North Carolina. For purposes of discussion, I second Dr. Knox's motion that we reconsider the vote.

It was then voted that the subject was open for free discussion.

Dr. Mason: In the resolution that has just been read, if he mentioned the fraternal orders, I failed to hear it, and, as it stands, I understand the resolution not to mean the fraternal orders. I may be in error.

Dr. McMullen: Mr. Chairman, the resolution applies only to the fees fixed by the old-line companies. We gave no consideration at all to fraternal orders, or anything of that kind. We announce it as a fact that the medical profession intends to allow no dictation whatever. We believe in the old adage that "The laborer is worthy of his hire." We have not alluded at all to fraternal orders. We have simply referred to the old-line companies.

Dr. Knox: Mr. President, the resolutions themselves definitely specified the old-line companies, and I ask that the Secretary read that clause that brings it out clearly—that was discussed and recommended to the House of Delegates.

The second preamble was then read. (See index.)

Dr. Mason: Gentlemen, to my mind it would be well to bring in something in regard to the fraternal societies. The fee is, as you all know (I think), $1.00. That is what they want to pay, and I would suggest that they be included also,—that the fee be brought up for the fraternal orders.

Dr. McMullen: I second that motion, Dr. Mason. If we do one, we should do both. If we can do one, we can do both, and it is useless to have it different. Now, in regard to the old-line companies, I have one or two things to say. I examine for some old-line companies, and, as the motion is put, I think it a little unfair. Take, for example, the companies that do an industrial business. As the motion is, and if it is adopted, it means that for those examinations—to take a man not more than a few minutes to do the work—they want $5.00. Now, I should think that it would be well to say that where the amount is for $1,000 or above that the fee shall be $5.00.

Dr. Knox: Mr. President, if the Doctor will allow me to interrupt him a moment, I want to say that I simply accede to his suggestion, but in a different way. In order to make it clear as to what the purpose is, suggest that another resolution be adopted specifically declaring that these resolutions are not intended to apply to the fraternal societies, nor to the industrial form of insurance. That was discussed and understood by the committee and intended to apply to old-line companies, but, in order to make it absolutely clear, I would suggest to the Doctor that he make the resolution and I will second it. Offer an addition to these resolutions, saying: "Resolved, that the resolutions are not intended to apply to the so-called fraternal organizations nor to the industrial form of insurance." I would move the adoption of such resolution, because that would do away with any suspicion that there is any hidden purpose whatever to do anything that we did not intend to do, and associate with it that benevolent order. The old-line companies are amply able to pay a reasonable fee.

Dr. T. S.McMullen: I offer the words of Dr. Knox, as to an amendment to this, and, if he will suggest it, or second it, I think that it is very explicit, and there is no possible way to misunderstand it. That is the reason that I brought this up—so that there would be no possible misunderstanding.

Dr. G. T. Sikes: Mr. President, I don't see any necessity for any change in this resolution whatever. It is perfectly plain. It refers only to the old-line companies, and I think the more words we indulge in the more complications we will have. If we leave these other companies out—these so-called fraternals—out (they are not referred to whatever, and they are not included at all), I think the resolutions are fair and just, and I can not see that there should be any dissenting vote to these resolutions as they have been presented this morning. It leaves each county in a position to

define where it stands. It compels nobody to take or reject a certain fee, but it puts the medical profession on record as looking at a matter from a certain standpoint—that we are not five, or ten, or fifteen-cent men!

Dr. Knox: Mr. President, I believe that the spirit of Dr. Sikes' remarks is all right. I believe that it is understood by the majority that the intention of the House of Delegates, and the committee who proposed these resolutions, was to cover this ground; but there is always a considerable number of men who, either by reason of their absence from the hall at the time of such action or by reason of certain faulty misunderstanding of what was intended to accomplish, will believe that the thing was intended to be directed in a round-about way. And, therefore, that there may be individual unanimity, we ought to make it so clear that nobody can doubt it, so that no one can have dissatisfaction about the resolutions adopted. Therefore, I believe that it would be wise for the Doctor to offer those resolutions, and I will take pleasure in seconding them.

I hope that the Doctor will withdraw his objection. It is a great question. It is the opening of a wrong principle, that may be operated against us, if we do not throttle it right here. The very essence and foundation, the vital point upon which the whole thing rests, is that a set of insurance companies presume to dictate what we shall charge for our services. It is not so much the loss of the $2.00 fee that I resent, as the principle of the thing, and I should think that we ought to fix our own fees and insist upon our right to fix them.

Dr. I. W. Faison: I want to rise to indorse what Dr. Knox has said. When you consider the medical profession of North Carolina, as a whole, different conditions come up to different men. Now, where a man lives out in the country, as I have done for the greater part of my life, by himself—nobody to come in and hoe his garden—he can pick his

business. It is very well to say I will, and I won't, do such a thing, but where you come in contact with fifty or a hundred doctors, you run up against a different proposition, and I think the proposition Dr. Mason has brought up will soften this condition. I am glad the committee has not brought this in, because I am persuaded if you were to pass it you could not maintain it.

Dr. R. Armfield: There is one thing that I have seen since I have been practicing medicine,—I have been practicing medicine twenty-one years,—that the greatest drawback to the medical profession is that one man is afraid another man will get part of his share. That seemed the trend of Dr. Faison's remarks just now, and not only Dr. Faison, but the profession at large. The fittest will always survive, and if there is not room at the bottom, there is at the top. Let a man maintain a reasonable fee—build up, rather than pull down, the practice of medicine, on the Cheap John scale. (Applause.)

I am interested in the Prudential Life Insurance Society, and I refused being their medical examiner for three dollars, and I said, "No, sir, I will not do it"; then they offered me five dollars. They had another man doing it for five dollars, and they thought they would get me to do it for three. I said, "Before I will disgrace the profession by charging half fees, I will get down and out, like an honorable gentleman." And for those life insurance corporations that post their signs on the walls and on the fences of hundreds of thousands of surplus, to get up and ask the medical profession to do their work for nothing, to set their fee, before I will do it I will step down and out, like an honorable medical gentleman! (Applause.)

I think the proposition before the Society is plain. We had this proposition down in the other hall. I represent my county. I am a delegate representing this body, and whenever you take the power out of my hands, and give it to the Society at large, you ignore the position that my county has

given. We had just as well select a representative to go to Raleigh, and then come back and say, "We will carry the whole State down there to make a law that those old-line societies shall refuse to pay more than $5"—and before I will sit down in my office and make a chemical analysis, and do it for less than $5.00, I will either write a cheap prescription or sit down and read books on how to cure some man who is more worthy.

Dr. Irwin: I don't intend to make any speech on this motion, but am glad the committees have seen fit to recommend this. I want to state to the Society that the Mecklenburg Society passed resolutions similar to these four years ago, and about fifty of us are still living.

Dr. Mason: I would like to suggest an amendment.

Dr. McMullan: Mr. President, if the Doctor will accept the suggestion, I think it ought to be made clear that this Society does not assume the right to dictate to the County Societies that they shall charge a minimum or a maximum fee. I think it ought to be clear that these resolutions are only suggestions to County Societies. Each local organization reserves the right to fix its own fees. These are only recommendatory resolutions.

Dr. Knox: Mr. Chairman, I move that you strike out from that amendment that the fee should not be less than $2.00. I would accept the resolution attached to the motion with the amendment stricken out.

Dr. J. T. Burrus: I have heard that this part of the house could not hear distinctly, and since that time a number have come in, and I would like to make a motion that the resolution be read.

I would like to second this resolution, as this is only a recommendation to the county societies. Suggest that we have the resolution re-read and then adopted, without further discussion.

(See paper.)

Dr. H. W. Lewis: Mr. President, I think that this matter, the more it is discussed, the more confusion will arise. It should be remembered that the old-line insurance companies fix our fees. They will do so in the future; they have done so in the past. The resolutions, as originally passed, deal with those old-line insurance companies. It is as plain as a pike-staff. Upon the other hand, we fix the fees of examining fraternal and industrial insurance, and you may recommend any specific sum, as regards industrial and fraternal insurance, to the county societies, yet I venture to say that it will have no effect; that those gentlemen of the county societies will go on examining industrial risks at what they have been examining them heretofore. They will make no change. We had resolutions in Bertie and Hertford, and passed said resolutions, just as have been read here by the chairman of the committee. We did not mention fraternal and industrial societies; we mentioned old-line insurance companies, but the matter was discussed, and we agreed to go on and examine for industrial and fraternal societies at the same price as before. We are making a sharp and pointed fight—but upon paper. Any sharp discrimination as between industrial, fraternal and old-line companies we should regard the communities we are dealing with. We are not dealing with industrial and fraternal companies. (Applause.)

I move that the original resolution be put to this house without amending.

Original resolution was then passed. (See index.)

Paper then read by Dr. R. A. Whittaker, of Kinston, on "Therapy of Enteric Fever." (See index.) No discussion.

Dr. R. H. Lewis: Mr. President, the time for the Conjoint Session of the State Medical Society and the State Board of Health has arrived.

Dr. Way: Mr. Chairman, before the conjoint session begins, I desire to report the following officers and committees

elected by the House of Delegates of the Society at the meeting this morning:

President—Dr. Edward C. Register, Charlotte.
First Vice-President—Dr. L. B. McBrayer, Asheville.
Second Vice-President—Dr. W. H. H. Cobb, Jr., Goldsboro.
Third Vice-President—Dr. W. O. Spencer, Winston.
Orator—Dr. James M. Parrott, Kinston.
Essayist—Dr. Thomas S. McMullan, Hertford.
Leader of Debate—Dr. Samuel D. Booth, Oxford.
Members House of Delegates American Medical Association—Drs. J. Howell Way, Waynesville; James A. Burroughs, Asheville.
Committee on Public Policy and Legislation—Drs. R. H. Lewis, Raleigh; Geo. G. Thomas, Wilmington; P. L. Murphy, Morganton, and (ex-officio) Edward C. Register, Charlotte; J. Howell Way, Waynesville.
Committee on Finance—Drs. D. A. Stanton, High Point; C. J. Sawyer, Windsor; S. P. J. Lee, Dunn.
Committee of Publication—Drs. J. Howell Way, Waynesville (ex-officio); Geo. W. Pressly, Charlotte; H. McKee Tucker, Raleigh.
Committee of Scientific Work—Drs. R. H. Whitehead, Chapel Hill; O. C. Daniels, Oriental; J. Howell Way, Waynesville (ex-officio).
Committee on Obituaries—Drs. C. M. Poole, Craven; H. H. Harris, Wake Forest; Kemp P. Battle, Jr., Raleigh.
Delegates to Virginia Medical Society—Drs. Samuel D. Booth, Oxford; Cyrus Thompson, Jacksonville; J. B. Knight, Williamston; J. E. Grimsley, Greensboro; R. A. Whittaker, Kinston; Jas. A. Burroughs, Asheville.
Delegates to South Carolina Medical Society—Drs. J. R. Gordon, Jamestown; D. J. Hill, Lexington; Ben. S. Herring, Wilson; W. R. Kirk, Hendersonville; D. A. Garrison, Bessemer City.
Delegates to Mississippi Valley Medical Association—Drs. R. E. Mason, Charlotte; J. A. Stevens, Clinton; S. M. Mann, Moyock; J. A. Turner, High Point; W. P. Horton, North Wilkesboro; H. H. Dodson, Greensboro.
Members State Board of Health—Drs. George G. Thomas, Wilmington; Thomas E. Anderson, Statesville.
Chairman Committee of Arrangements, 1906—Dr. R. L. Gibbon, Charlotte.
Place of Meeting in 1906—Charlotte.

A recess of the general meeting was then ordered, and the annual conjoint session of the Medical Society of the State of North Carolina and the Board of Health of the State of North Carolina was held, Dr. S. Westray Battle, a member of the Board of Health, presiding. (See index.)

Wednesday Afternoon, May 24th.

Society called together at 3:30 p. m. by Vice-President Julian.

Dr. Graham read the first paper, on "A Proper Milk Supply for the Cities and Towns of North Carolina." (See index.)

Dr. Lewis: I was very glad to hear the Doctor's excellent paper on "The Purer Milk Supply." It is undoubtedly a great evil. If you, gentlemen, have ever examined the milk supply for our towns and cities you will find that it has an immense amount of filth in it. In the present state of development in North Carolina you can not expect, of course, to carry out the idea in regard to milk purification; at the same time a great deal can be done without any extra trouble, and the plan seems to be for the smaller towns, or any town, to require any man selling milk to have a license, the understanding being, of course, that the dairy selling the milk shall be subject to inspection and to rules and regulations. Now, the very fact of the inspection of the dairy—and to those of you who love milk I would suggest that you do not examine the dairy from which it comes too closely, lest you find it infected that way. To give you some idea of the dangers in the milk in a town in the North, the milk-cows were bedded in their own manure, so you can imagine the condition of the cows in those dairies. Now, if the system should be inaugurated, to have some one look at the dairies, to see that they are kept clean, that the cows are clean, that the udders are washed, and then, how the milk is cared for afterwards,—if it is emptied into a can and set in the stable to absorb the odors, or whether, as soon as it is drawn from the cows, it is carried outside and put in a can in the cool air,—and those are the various points that any dairyman can comply with, without any serious expense,—I think that a great deal will be accomplished in the improvement of the milk supply, and we all know that when the milk supply is improved it will be a great saving in the diseases of infants. I

hope you gentlemen will remember the matter, and those of you who live in towns will see that something is done to protect the people, to have the milk delivered in as good condition as possible, and delivered all right. And representing the health element of our Society, I desire to thank Dr. Graham (who has been very active in the campaign which has been inaugurated in Raleigh) for bringing the matter to our attention.

Dr. H. B. Weaver: Mr. President, sometimes there are propositions that are so great in themselves that we fail to grasp their significance, and if, as Dr. Graham has well said, one-third of the deaths occur in infancy—there being so great mortality in infancy, resulting from the use of impure milk, and, as milk is the only true food and source of nourishment for infancy and childhood, this question, it seems to me, is the most paramount question that has come before the Society. Now, what is the remedy? I wish to emphasize what the Doctor has said, and add one other thing: What we are trying to do at Asheville. I believe Dr. Lewis said there was no perfection of the plan for the preservation of milk in the South. I suppose that he has forgotten that we have a Vanderbilt in the "Land of the Sky," who is a thorough sanitarian in regard to the preservation of milk. He has a system there that I suppose can not be excelled anywhere. The milk, before it is brought into our city, is thoroughly sterilized in every respect. The milking of the cows and the attention of the dairy are perfect in every respect. The cows are bedded in the purest straw, moved every day; the udders are washed; the milking is carried on by milkmen who are dressed in white garments, thoroughly aseptic; the milk is put in sterilized cans before it is brought to the city. Not only that, but the efficient Board of Health have compelled, or are compelling, all the dairymen to first test the herd for tuberculosis, mark the wagons as they are tested, and superintend each dairyman to see that he is as cleanly as possible, and brings his milk in in as thorough a condition as possible.

We hope to perfect that plan and have it done by all of our dairymen. But there is one more thing to add to this plan, an imitation of the great transporters of beef. You remember once the Armours were in New York and Boston, now they are in Kansas City and Omaha. The great inventor invented a great plan. The beef is slaughtered there, put in refrigerators and brought to Raleigh, to Greensboro, as fresh as when killed. My idea is this: After the dairyman has milked the cows, have a process of cooling, take the animal heat out, and then encase the cans in refrigerators and bring it in. After 60 degrees it begins to ferment, and after that it is past redemption, and, so soon as the animal heat is out, put in aseptic cans, put in ice, and compel the dairyman to bring it into the city in that manner, and you will get pure milk, and, as the Doctor well said yesterday, we will not have so much mortality in infantile diseases.

Dr. Faison then introduced Mr. Charles Moore, dairyman, of Charlotte.

Mr. Moore: I would like to thank Dr. Graham and the Medical Society of North Carolina. I heartily agree with the plan he has mapped out, and I can say that all leading dairymen will follow if the M. D.'s will establish his proposition in each city.

Dr. Faison: For fear the gentlemen of the convention do not know the man who has just spoken, I would like to introduce to the convention Mr. Charles Moore, of Charlotte, who is a dairyman at Charlotte, and if he would open his mouth and tell you what he knows about running a dairy, I think you would all be wiser than you are. The dairy business is one that we have thought a great deal about. It was my good fortune to read a paper like Dr. Graham's at the Charlotte Medical Society four or five years ago, in which Mr. Moore and Mr. Watkins took great interest, and they do good work towards producing good milk. I am satisfied that their cows are better cared for than the cows Dr. Lewis is acquainted with. I am satisfied, furthermore, that they do

not do everything they could do to give us better milk in Charlotte. Accidents occur in all well-regulated families, you know, and accidents occur with them as they do with other people, and sometimes they give us bad milk when they intend to give us good milk, and bad milk is dangerous and good milk is not dangerous, and, as Dr. Graham has so well said, most of the danger is after the milk is taken from the cow. Now, Dr. Weaver spoke beautifully of the milk-getting at his place in Asheville. It is all right and proper, but I want to agree with Dr. Graham in that pasteurized and sterilized milk is not the best food. It is an established fact that the raw milk is better than cooked milk; it is better to taste, it is worth more as a nutriment; its percentage of value is worth more uncooked than cooked, and children do not do as well on sterilized and cooked milk as on raw milk, and a well baby should have raw milk, but when you come to a sick baby, you have a different proposition,—you have to modify according to his condition.

This milk supply is one that every man who has children, or who has children who are close to him, ought to be interested in. Now, it is not right to put all of the sick babies on milk; it is not right to accuse bad milk of doing all the devilment that sick children have to do with, because you will find that a great many babies who do not have milk, in the same proportion are sick, or sicker, than those who do, because it is one of the greatest mediums through which bacteria introduce themselves,—but it is the second summer that we get most of this trouble with children, and it is the second summer that people begin to feed their young. It is the second summer that they change their diet from milk to other things. Moreover, it comes when it does not come through the food at all. Children are naturally energetic little animals, and they want to move about, and people put them down on the floors—and whose floors are clean? How many children crawl about on floors that are covered with bacteria? Children put everything in their mouths, and these bacteria are

transmitted on playthings, and things of that sort, and the doctor and everybody lays it to the food; so it won't do to lay it all on the milk; there are other channels through which they get sick, but the milk question is the one under discussion, and I endorse what Dr. Graham has said. It is but one of my hopes to bring a better milk supply, and the dairymen are ready to do everything they can to give good milk in Charlotte. I have talked with these men. I know what I am talking about, and I know that they are willing to do so far as they are able, but if you want to get in discussion with one of them about tuberculosis in milk, and one of them is here, and if you will give him a chance he will discuss the question as to whether the disease is carried to the children in milk. That is a mooted question, as to whether this disease does go through milk into children. While I admit and say that it is right to do these things, it is a hard matter to trace up a case where this disease is transmitted to a child from milk. Why, gentlemen, in most cases of disease with children which you have had to do with, it is in the lungs. That does not come through the bowels, but through the lungs, through the nasal passages. If it should come through the milk you will find the infection attacks the mucous membrane of the intestines. While the majority of the cases are in the lungs and not in the intestines, the men who write about it are afraid to make the absolute assertion that the disease goes in that direction. But, to be on the safe side (we all like to get on the safe side), these things should be taken into consideration: That cows should be tested, and, with this clean milk, with clean udders, with clean milkmen, with clean cans, with milk cooled down to 46 degrees and kept there (I don't believe in keeping it colder), if you keep it at 46 degrees you will get at a point where these bacteria do not reproduce themselves, and the sooner it is brought to that point, the better, and the safe plan is to bring it down to 46 degrees and keep it there. Milk should never be carried about in a tin can and delivered to people. No dairyman ought to be allowed, under any

circumstances, to carry his milk around in a tin can. Every particle of milk that is dished out by a dairyman should be put in bottles—not hermetically sealed, by any means—absorbent cotton is the best stopper—and if you will do that you will get your best and safest milk from your dairyman, and if a dairyman came to my house and drew milk from a tin can, I would pour it out on the street. They don't do it at our house. I don't think our dairymen would do it.

Dr. Weaver: Mr. Chairman, I rise simply to correct an erroneous impression that seemed to have gotten on Dr. Faison's mind. I did not mean to convey the idea that Vanderbilt *cooked* the milk. He sterilizes the bottles, because he don't carry it in cans.

Dr. Graham: I thank you, gentlemen, for your kind interest in the paper. I have nothing further to say.

Paper then called for by Dr. J. P. Monroe, of Sanford, on "Burns as Seen by the General Practitioner and Their Treatment." (See index.)

Discussion by Dr. C. C. Hubbard, of Worthville: The relief of the pain is one of the most important things. I have always found that common baking soda is one of the best things; it will kill the pain almost immediately. I tried it the other day on a child that was burned very badly. Simply rubbed the soda all over the burns, with good results.

Vice-President: Dr. Lynn McIver asks that I read his paper by title. So ordered.

(See index.)

Paper read by Dr. Lawrence E. Holmes, of Biltmore. Subject: "Post-Operative Nausea and Vomiting—Is the Operation or the Anæsthetic the Cause?" (See index.)

Dr. G. L. Hunner, Baltimore: Mr. President, it seems to me that such a valuable paper ought not to go without a word, at least, of congratulation from the Society. It is by this very careful observation that our knowledge grows. We have all observed that the Doctor has come to some definite

conclusions, and other points he leaves in a very inconclusive way, partially from the small number of cases and partially from the nature of the problem, but we ought to have more of this sort of work reported to the Society. Our practitioners ought to keep track of these cases, and our surgeons certainly ought to keep better track of them, and I feel we are to be congratulated on hearing such a paper.

I don't know that I am ready to agree with Dr. Holmes about keeping all fluids from the patient. That has been our treatment for a number of years, and I think our surgeons in Baltimore are gradually switching around to the idea of allowing the patient to begin to drink water as soon as she pleases, and as much as she pleases, and it seems to me we get better results. We get rid of the nausea earlier than we do by withholding the water. It seems rational to think that by washing out the stomach, as the patient does if she gets plenty of water, that she will vomit and get rid of this nausea.

The ordinary patient, when coming out from anæsthesia swallows a great deal of mucus, and the stomach linings and the linings of the lungs become impregnated with this ether odor, and there is no question that the whole phenomenon is largely one of suggestion and of nervousness. If the mucous membranes of the stomach are so saturated with mucus and this ether odor, it is rational to suppose the sooner you get rid of it the better off will be the patient, and the less of this suggestion they will have to keep them ill. It seems to me that the nature of the operation, and the operation itself, has very little to do with the question of nausea, and it seems to me that we must lay it to the anæsthetic,—whether we use ether or chloroform,—and very largely, I say, it is a matter of suggestion, as the Doctor has pointed out. It has been the people of nervous temperament who have had the greatest trouble. We are doing work under cocaine—work of all kinds—about the uterus and about the abdominal cavity, and we have very little nausea afterwards. It is the custom, after

an operation with cocaine, to let the patient have a light dinner afterwards, with no ill effects. It would seem that the character of the operation has very little to do with this phenomena.

Dr. W. L. Roberson: A continued vomiting frequently produces very deleterious results on the patient. The question as to what produces this nausea is one not easily settled. I certainly can not agree with the Doctor that the nausea is as bad or protracted in the cases of a small amount of anesthetic as it is with a large amount, nor can I agree with him as to ..... Sometimes we have operations which should cause very little reflex trouble, and yet we have protracted nausea. I recall some years ago, in the 80's, in New York, it was a habit to give 20 grains of chloral or more, before the patient was placed under the anæsthesia. That was abolished because it failed in its results.

I think a class of patients are very likely to vomit. I think if you give thorough preparation to your patients, both by confinement to the bed, the day before, and, when you can do so, a thorough preparation in every way, connected with the kidneys, the stomach, the urine, the secretions in general, that you would largely control that, or control it to a greater extent than otherwise. If the reflex trouble is the cause of nausea, then why should we not give hypodermics of morphia and control it easily? It only controls so long as the sensibilities are under the anæsthesia, and the vomiting commences soon after. I do not contradict the Doctor's statements, and hope that these investigations will prove of benefit to us. I can not at present accept them as proven by my experience.

Dr. Weaver: It seems to me that two points were not clearly brought out in the Doctor's paper, that is, the *safety* and the *simplicity* of the administration of ether in preference to chloroform. The Doctor claims, in his experience, that the patient can be thoroughly anæsthized in a very few

minutes with four ounces of ether, without any bad results from inflammation of the mucous membranes. It would seem that it is far preferable to risking the danger of chloroform, for we all know that we sometimes run up with a case when we wish we had used ether. So, I just merely wish to impress those two points; and before I sit down I wish to state to the old members, more than to the young ones, that there is one thing certain, judging from the character of the majority of the papers that have been read here, that they are *so perfect* that they are far above criticism, or, they are not worth the paper they are written upon. I know a hundred men who are here now, who have been in attendance on this Society for several years, who have not opened their mouths in discussions in the progress of this meeting; and what encouragement can the young men have to bring up scientific papers here, and we let them fall as flat as a flounder, without any discussions? It seems to me a silence unworthy of the action of this Society.

Dr. A. C. Harrison, Baltimore: It is not infrequently we notice the vomiting long before the operation is begun. Patients frequently vomit before the operation. There are a number of different ways of giving the anæsthesia and that affect the amount of vomiting that follows. I think that the shorter the anæsthetic, the more diluted it is given, that the less vomiting occurs. Of course it is highly probable that the operations, those in which the shock is severe, are probably longer, and the combination of circumstances produce more vomiting than would occur with a shorter operation. Now-a-days, at the city hospitals, where it is the universal rule (only recently changed) the patients are allowed to drink water at dinner. As soon as they are able to take care of themselves they are allowed to drink all the water they want. If they vomit it up, it washes out the stomach, and does no harm; if they retain it, it makes the kidneys more active, and that is what we want.

Dr. J. M. Templeton, of Cary: As the men who sit still and say nothing are criticised for it, I simply wish to say that one of the reasons why I have not been able to take part in the discussion is that a great many—in fact, the majority—of the men who read papers here read them as though everybody was sitting around them—in a conversational tone, in a hall where the acoustic properties seem to be very bad, and I think, if they want the papers heard, the best way to do it is to keep good order here. There is too much talking during the reading, to get the substance of what is said, if it was said in a louder tone; but it is not the whole of the paper to write it, the man ought to practice until he can talk out and be heard all over the house, so we can understand what he says. Now, I did not get half a dozen words of the last paper read, but from the title of it I would just like to say that, in my judgment, while the operation may have something to do with the nausea, I am satisfied that I have seen people as sick when I had administered chloroform for toothache as when I had administered it for an amputation; so whatever the effect an amputation may have, the chloroform itself is a pretty important factor in the nausea.

Another fact,—and attention was called to that by some one,— is the condition of the patient. My conviction is that a man of faulty metabolism, of which Dr. Faison talked this morning, is very much more apt to suffer from nausea from an anæsthetic than one whose functions are in good order.

Dr. Holmes, of Asheville: I am glad my paper has created some interest, for it is a subject about which you can find very little in the text-books. In my hospital experience in the North it used to be an almost universal rule to keep everything out of the stomachs of the patients for twenty-four hours after abdominal operations, but in Biltmore Hospital, from the records of which I have taken my figures, this, as a rule, is not done. I have seen a number of cases kept without taking anything into the stomach for many hours,

and remain free from any nausea or vomiting, and yet, even after so long a time, a few spoonsful of water would set up uncontrollable nausea and vomiting.

As I said, we can not find out very much about this particular subject from the literature, but it seems to me that a nervous element is at the base of it, in very many cases. Seventy-three per cent of the men are free from any trace of it, and only sixteen per cent of the women. Nervous people, and sometimes the very ignorant, seem to be affected more severely than others.

Dr. Poole: Mr. President, this is out of order, I know, but I may have to leave here to-night, and I wish to say that the Committee on Obituaries is ready to report.

The Vice-President (Dr. Julian): We will hear the report of the Obituary Committee. Immediately after the report of the Obituary Committee there will be an opportunity for friends to speak on this report.

Paper read by Dr. C. M. Poole. (See index.)

Discussion by Dr. Booth: It was my privilege to know Dr. Carr for many years, and to meet him many times in the practice of our profession. I moved to Oxford twenty-five years ago last winter. Before that I lived at a little hamlet fourteen miles from Durham. There were no doctors between me and Durham, and I frequently met the Durham doctors, and there was one I met oftener than any of the others. Dr. Carr's ear was never closed to the cry of distress, nor did he ever fail to go to the assistance of a brother practitioner when he needed help. I remember one dark, winter night in '76 I was called to see an old lady about eight miles from my house, and six from Durham—about half way between the two places. I found her with strangulated hernia. She was a terrible scalawag. Her husband did not want to send for a doctor unless the case was extreme, and I found her almost in rigor mortis. I lived fourteen miles from any drug store, and I very rarely used chloroform. I found it was impossible to reduce this hernia

without chloroform, and possibly it could not be done with it. The old man said: "Doctor, when I sent for you to-night I did not expect to get you. This is a terrible cold night. I don't think we will be able to get another doctor here to-night." I told him to go and get Dr. Carr, he would come. Dr. Carr got there before day, willing to do his part. We operated on the old lady, and she did not die. But that was characteristic of Dr. Carr. If there was human suffering to be relieved, or a doctor who needed help, he was always ready.

The last time I met Dr. Carr was summer before last. When the hotel at Chase City was opened, the proprietor invited a number of the doctors to go to an outlay there, and Dr. Carr was one of the physicians. I don't think I ever saw a man with more vivacity than he showed that day. He was the picture of health. Not long after that I heard he was in a despondent condition, and I knew it was his physical condition that caused it. But, in all his life, his desire was to relieve human suffering, and if we can relieve human suffering we have done the greatest work that has been put before us. I think that is the greatest privilege that we have. We don't talk about saving life; we don't know when we do save life, but we do know when we can relieve the sufferings of distress, and I can say that he was always ready to go to that relief.

Dr. J. Howell Way: In the death of Albert Gallatin Carr the medical profession of this city and State has sustained a distinct loss. In his passing into the great beyond the Medical Society of the State of North Carolina has lost one of her most devoted and faithful sons and warmest adherents. Coming into this Society not quite two decades ago, I soon learned that Doctor Carr was one of the men whom the Society could always count on being present at the annual meeting. I also learned that he was one of the well-known members who was always interested in and kind to the newcomers. The early impression he made upon my mind in

the eighties when I first met him ripened into a sincere respect and a warm regard as the years passed and I continued to meet him in our annual sessions.

He was a beloved physician, a true and devoted friend, a sincere and an honorable exponent of the best principles of our art. He is no more. He has passed on before, but his good deeds, his upright life, his known faithfulness in the performance of all duties and his kindly, genial smile will ever be recalled by those with whom he came in contact. Those who knew him best said he was ever kind and helpful to all.

Answering to the one "clear call," our friend has "crossed the bar." His bark has gone "out to sea," but what a glorious realization it is. What a comfort and consolation it is to us all, the thought that which is called death is not the end, but the beginning of life. It does not mean oblivion, but glorious immortality.

"Death," the poet tells us, "is the gate of life." It is but the disrobing of the mortal garments and taking on of the beautiful, the splendid, the imperishable habiliments of eternal life. It is the transition from a life of sorrow and care, of sickness and death, to one of transcendent peace, of eternal rest, of endless life.

"His day is come, not gone;
His sun is risen, not set;
His life is now beyond
The reach of death or change,
Not ended, but begun."

In the romance of early Indian Oregon, the talented author of the "Bridge of the Gods" has beautifully expressed the thought of that union hereafter. When referring to the unchangeableness of the mighty Columbia, which, notwithstanding constant and continuous change in other things, still flows onward and ever onward, to the sea, he beautifully says:

"Generation after generation, daring hunter, ardent discoverer, silent Indian, all the shadowy people of the past have

sailed its waters as we sail them; have lived perplexed and haunted by mystery as we live; have gone out into the 'Great Darkness' with hearts full of wistful doubt and questioning, as we go; and still the river holds its course, bright, beautiful, inscrutable. It stays, we go. Is there anything beyond the darkness into which generation follows generation, and race follows race? Surely there is an after-life where light and peace shall come to all who, however defeated, have tried to be true and loyal; when the burden shall be lifted and the heartache shall cease, when all the love and hope that slipped away from us here shall be given back to us again, and given back forever."

Dr. Irwin: Mr. President, I would not attempt to add a word in regard to these members who have passed away, but it occurs to me that this should be our creed, our practice, I should say—to scatter flowers over the graves of departed members, to write things concerning their past lives—this is all right and proper, but do not neglect to scatter some bouquets and sunshine about them while living, and inspire them to live lives of usefulness and goodness.

Paper then read by Dr. W. O. Spencer, of Winston, on "A Plea for the Prompt and Efficient Treatment of Gunshot and Other Wounds of the Abdomen, with Clinical Reports." (See index.)

Dr. J. M. Templeton: Mr. Chairman, I want to tell an anecdote. (Applause.) There was a man, upon one occasion, who had a dog, who was so trifling the man's wife was anxious to get rid of him, so she kept at her husband to dispose of the dog in some way or other; so, one day she raised thunderation and the man took the dog off and traded him away. He then returned home and told his wife that he had traded Towser off. You have traded Towser off? she said. What did you get for him? Ten dollars. Well, it was more than he was worth. Where is the money? Oh, he said, I bought two bull pups, at five dollars apiece, with it.

My criticism of the paper of a few moments ago was in-

tended to improve, and I do hope the gentlemen who read papers here will speak out so we can hear them.

I want to say that I believe that was an up-to-date paper on the treatment of wounds of the abdomen, but I simply take that matter on faith. I did not hear anything. Now, Mr. Chairman, I believe from the title of the paper that the gentleman would say that the thing to do in emergencies of this kind is to operate promptly, and, with one proviso, I quite agree with that paper, and that is, provided you are competent, or can get some one who is competent to make such an operation. You gentlemen who recall your first case of abdominal surgery, when you went into the proverbial tub of intestines to find an infected appendix, recall the difficulties you encountered there, and you were especially fortunate if you did not do more harm than good. Hence, I say if you have the proper preparation in experience, or can get some one who has, operate promptly. If you have not, leave that man alone to the forces of nature to cure him. I believe, sir, that statistics show that in injuries of this kind, where the patient is kept almost perfectly quiet after an injury of this kind, he will recover, anyway; the proportion of those who recover is very much larger where they are moved. My recollection is that wounds in battle, where soldiers have been transported by wagon and other vehicles, the statistics show a higher mortality than those who fell later and stayed quiet for a time, until nature could make repairs; so, if I am ever so unfortunate as to have an injury of this kind, unless I have some person prepared and experienced in this matter, I prefer to take my chances, rather than have some tyro in surgery fingering my in'ards.

(Much applause.)

Dr. R. L. Payne, Norfolk, Va.: I regret to say the gentleman was among many others who could not hear this very valuable paper. I regret it, because it happens to be a paper of great scientific merit. I wish to say in addition, to the gentleman who has just taken his seat, that I am afraid

some people may be left untreated if we adopt his idea that prompt surgery, or no surgery, must be done. Other things being equal, it is well that prompt surgery be done, but often in our efforts to do prompt surgery imperfect and unclean surgery is done. And so we must not let our feelings and our excitement run away with our better judgment. We must not believe that a man shot in the belly must be operated on immediately or death will certainly follow. As a rule, time may be had in which to send for a surgeon, who may be gotten there in five or six hours. Unless there be a hemorrhage, the mere question of perforation can wait for a number of hours, especially if that perforation be gunshot, because usually the holes are small and the mucous membrane pouching into the holes limits the amount of effusion and we can readily take care of the small quantity of intestinal contents poured out immediately after the injuries have been received.

But I wish to impress, if possible, the absolute necessity in these cases, if any sort of competent surgical aid can be invoked, that operation be done. If there be perforation of the abdominal wall (and just here I would say that I would certainly limit the use of the probe to a determination of whether or not the abdominal wall was penetrated, being careful that the probe did not go within the abdomen for many a patent reason), if we are reasonably satisfied that the peritoneum has been opened, then the belly must be opened as soon as we can get a surgeon. We can not see inside, and we can not know what is going on there until it be too late.

Take the cases reported here to-day, and any sort of treatment other than that adopted must have resulted in loss of life. Every one of these cases must be opened; a simple incision of the abdominal wall can add nothing whatever to the danger, if it be properly done, and we must investigate and find out what harm has been done. But to permit these cases to go untreated, so large a percentage would die

that I dare not attempt to name what percentage I believe would die. Again, I wish to say that I do not agree with the author of the paper in one or two things. In the first place, I would not flush the abdominal cavity. I believe there is more danger of disseminating infection in this way than there is by careful sponging away any foreign matter. Again, I would not fail to drain a case in which there could be any possible infection from escape of the contents of the hollow viscera. If the injury has resulted in hemorrhage, without perforation of the viscera, then the bleeding may be controlled, the clots removed and the abdominal wound entirely closed, but under no other condition must we neglect to drain. True, the Doctor reports successful cases, but while we applaud his results we can but wonder at his temerity.

In the next place, I do not think it is necessary (and I may not have understood the Doctor clearly) that the holes in the wounded viscera be trimmed, unless there be great loss of tissue, and then, perhaps, rapid resection would be best. Usually it saves a great amount of time to simply turn in the wounded tissues with the Lembert suture, for while we are trimming the shot-holes we are losing valuable time, and would probably be doing the patient greater service if we left that to nature to manage.

Just one point more I wish to emphasize (and the Doctor alluded to this), that we do not be quick in determining the extent of the injury done, or in other words that we do not come out of the abdominal cavity until we have investigated everything that may have come within the track of the ball. I don't hesitate to say that I believe we should make a very large incision to begin with, and not be hampered with a small wound. I think it would be best to begin our investigation at the cæcan, following up the small intestine systematically, going over the whole of it rapidly, and not attempt to pull out and push back as we go along. Indeed, if time is a factor, and it generally is, I usually make a big incision

and eviscerate at once, carefully protecting the intestines with towels wrung out of hot normal salt solution, and in this way I can run over the bowel more rapidly, save time and shock to my patient, and be more certain I have determined the full extent of the injury.

Dr. G. L. Hunner: I was very much pleased with this paper. It seems to me, though, that we ought to tell the man who is not a surgeon, and who can not readily get one, what to do. I think that every man ought to realize the importance of keeping the patient quiet in these cases,—if you wish to wait. As the Doctor said, "Do not transport them," and, I would add, if they have recently had a meal, wash out the stomach and leave it alone; don't give them water or anything, to stir up gasistalsis, and then give them large doses of morphia. We know that by looking back to the treatment of the middle of the last century, in the treatment of the abdomen, that the records show that they were almost as rough as they are to-day, and in those days large doses of morphia were given to help nature to keep this substance from being distributed. In other words, let us be conservative in the treatment of the cases of the abdomen which are serious, in that doubtful period when we can not determine whether it is best to operate or not.

Dr. W. L. Robinson, of Danville, Va.: Mr. President, will you pardon me, but gunshot wounds of the intestines are of too much importance to pass over without free discussion. The question is, in the first place, to operate or not to operate?

We have a case in which it appears that the patient will die, unless something is done. Twelve years ago I read an article before the Virginia Medical Society upon the subject. We know perfectly well that we can open the abdomen rapidly under cocaine. If there is a hemorrhage, it is imperative to operate; if shock, there is no surer way to overcome it than to fill the abdomen with salt water, so, if the surgeon is ready, I say operate at once, irrespective of the

man's condition. If he has a hemorrhage, it is imperative. If he has shock, you can overcome shock and proceed with operation.

The Doctor's success is most admirable and demonstrates what careful and prompt work can accomplish. The mutilation of tissue, in some of these cases, would not admit of simply wiping out with gauze, the whole cavity is soiled. I therefore do not agree with Dr. Payne. Not only would I carefully remove with gauze all foreign material and fecal matter, but would flush out in bold stream with hot water. You not only cleanse the cavity more thoroughly, but you control the blood vessels of the portal circulation, thereby stimulating and strengthening the heart action. In those desperate cases I keep a stream of hot salt water pouring in the abdomen all the time I am operating, and leave the belly full of it when I close the incision. I am satisfied that I saved three patients by this method in the last twelve months.

One other point that I would impress is contrary to Dr. Payne, but is right along that line, in that the man is relieved by a continuous stream of water poured into the abdomen. You can perfect your surgery better and take more time, by keeping that man in the Trendelenburg position, and pouring in salt water (hot) all the time. I did it four times last year.

It regard to the Murphy button, I am getting a little skeptical. I have one in a man now that has been there three months. He has gone home. I wrote to several men to know about it. Price, of Philadelphia, had one to stay in abdomen one year without harm. It makes me feel very squeamish. There are other methods that I think would do better.

The point that I simply want to impress is this: that I would operate irrespective of the man's condition, at once.

I fully agree with the Doctor that after you have wiped out all deleterious matter, flush it out, and leave the abdomen full of salt water. I commenced that thing five years

ago, and did it four times last year, and have no cause to regret it.

Dr. Hargrove: Mr. President, it was our custom, in the University of Maryland, to use moist gauze, with normal salt solution, and then we did not have to pour in for shock, and we got good results. We used dry gauze first, then the moist gauze.

Dr. Spencer: I thank you all for discussing this paper.

Vice-President: After Dr. Long's paper, the President has asked me to make it in order for Dr. Hunner, of Johns Hopkins, to read his paper.

(Objection being made to interruption of regular order, the next paper was called for.)

Paper read by Dr. J. W. Long, of Greensboro, on "Gallstones, with Reports of Cases." (See paper.)

Dr. Jones: Mr. President, I would just like to make a few remarks. The patient I am about to speak of was referred to me from Hillsboro. It was difficulty of digestion. The only symptom she had was a pain. The pain was away in the region of the stomach. It came on twice a week, generally. She had never vomited. The only tenderness was on the left side. Dr. Long is to be congratulated on his diagnosis.

Paper read by Dr. E. A. Lockett, of Winston, on "The Gastric Ulcer." (See index.) No discussion.

Paper called for by Dr. A. C. Harrison, of Enfield, on "Surgery of Stomach and Duodenum," but the Doctor was absent.

Paper called for on "Surgical Treatment of Dyspepsia," by Dr. Stuart McGuire, of Richmond, Va. Dr. Way announced that Dr. McGuire had just telegraphed him that he was unavoidably detained in Richmond.

Paper then read by Dr. John R. Irwin, of Charlotte, on "Gastrostomy." (See index.)

(Discussed by Dr. C. C. Hubbard, but stenographer could not catch a word he said, hardly.)

The report was then called for by Dr. D. A. Stanton, of High Point, the Chairman on Railway Surgery. Subject: "Some Peculiarities of Railway Surgery." (See index.)

The session then adjourned until after supper.

Wednesday Evening, May 24th.

Session called to order at 9:15 by the President, Dr. Tayloe.

Dr. C. A. Julian, of Thomasville, First Vice-President, then read the first paper, entitled "The Responsibilities of the Railway Surgeon." (See index.) No discussion.

Paper was called for by Dr. W. A. Applegate, of Chattanooga, on "The Equipment of the Railway Surgeon," but Dr. Applegate was absent.

Paper called for by Dr. S. G. C. Pinckney, of Atlanta, on "Corporation Liability in Traumatic Hysteria." Dr. Pinckney was absent.

President: The next paper is the Annual Debate, "A Plea for a More Liberal Diet in Typhoid Fever." Leader of debate, Dr. E. T. Dickenson, of Wilson.

Dr. Dickenson: Mr. Chairman, I want, in the first place, to apologize for bringing such an unpopular subject before you for discussion, but I feel in some measure justified in doing this because I have always found that the opponents to this method are those who have least tried the method. (See index.)

Paper read by Dr. E. C. Register, of Charlotte, on "Personal Views on the Management of Typhoid Fever." (See index.)

President: We have two other papers on the same line, that have to be read. We will then have the general discussion.

Dr. Fox: I beg to announce to this body that the Guilford County Medical Society have prepared a reception in the Benbow Assembly Hall, upstairs, first, and after they are through there, they will repair to the dining-room below. The gentlemen are requested to go upstairs in the Assembly Hall first, for some refreshments, etc., that have been prepared, and then to the dining-room below.

Paper called for by Dr. F. M. Winchester, of Charlotte, (next) on "Intestinal Antiseptics in Typhoid Fever."

Dr. Winchester: After listening to the papers of my illustrious predecessors on this subject, I feel somewhat small about my little paper, and, were it not for the fact that apologies are always insipid, I should proceed to offer an apology. Even as it is, I venture to make the excuse that it was a paper gotten up for our local Medical Society, on short notice.

(See index.)

Dr. Julian: I notice from the programme that there are papers on the diet, on the general management, and also on the antiseptic treatment of typhoid fever. I am certainly very much interested in the *whole* subject.

I have been very highly entertained by Dr. Dickenson's paper, and while he has told us a great deal that has not been borne out in my experience, I must congratulate him on his success, and hope that the future will bring to him the same measure of fullness and prove satisfactorily that we can feed our typhoid cases more liberally.

During the past summer I passed through a fearful epidemic of this disease at the Thomasville Baptist Orphanage; eighty-six cases were treated by me in the infirmary, and you can imagine how anxious I am to be here to-night and hear a general discussion on it and to hear what others are doing for typhoid fever. I did a great many things from the 11th of July until January of the next year following in the epidemic. The cases when admitted were given calomel. I then commenced acetozone, kept the patients quiet and gave them baths. During the month of October I was absent two

weeks, and Dr. Battle, of this town, took charge of my patients during this absence. To a part of them he gave acetozone, others salol, and to others no medicine at all, using only the bath, and there was no appreciable difference in his series of cases. Every case was kept perfectly quiet, we were very careful of the diet. They were fed sparingly; those cases that could bear it, we gave sweet milk; when we had tympanites we gave buttermilk, then, if we had it, we gave albumen or albumen and cocoa. Sometimes we gave chicken broth, but we would hardly risk it until the temperature was normal. I found that by careful feeding, keeping patient quiet, and never allowing the patient to get off the bed to stool, that in the eighty-six cases we did not have a case of hemorrhage. Only six cases had symptoms of tympanites. The bath was rigidly enforced, and while we had cases that reached a temperature of 104 degrees, we never resorted to anything as an antipyretic but cold water. The method of the bath was as follows: A bucket of cold water from the spring (no ice in it), brought near the bed and placed on a stool. We then put a rubber cloth under the patient and formed a trough in the bed, then took a sponge and dipped the water from the bucket over the patient. We let the patient remain in this rubber cloth, in this boat arrangement. At first our bath temperature was, I think, 101 degrees (afterwards it was 102 to 103 degrees). When we gave the bath, in twenty minutes we would reduce the temperature from 102 to about 100. We would then sponge the water out of this trough back into the bucket and take the rubber cloth from under the patient, and the patient was on the sheet, quiet. We would then put an ice bag to the nape of the neck and one to the abdomen. The patient would go to sleep and rest two or three hours, until the temperature would go up again; then we would repeat the bath. We always kept the ice bags to the nape of the neck and the abdomen, and I believe by keeping the ice bag to the abdomen it prevented hemorrhage. We had no cases of hemorrhage. We

had five cases of parotid complication. Two of them did not suppurate, and died. Three of them suppurated. I opened the gland, eliminated the pus, and they got well.

The point I wish to make is this: It is just simply in the management. The management, as I said before, is simply to keep the temperature down with a bath; feed them lightly; keep them nourished sufficiently to keep alive. We used antiseptics because we thought we were obliged to,—that it was necessary, and we found that one antiseptic acted about as well as another, but I attribute all the success to the bath; to the careful watching of the temperature by my nurses. Just as soon as the temperature would go above the bath point—102 or 103—we would reduce it, make our patients comfortable, and give them a chance to get well.

Dr. J. G. Robeson: Mr. President, I can not make but very few remarks, but I do want to say this: I want to thank my friend, Dr. Dickenson, for his instructive paper. I think I have gotten as much from it as from any paper that has been read here, and I know, after we have fed our patients in the old, orthodox way, we can not give solid food; I know it is so, it can not be done; but I want to say this: I have treated five patients that I know to be typhoid fever, by this method he has given us to-night, with better results than those in the old, orthodox way. They have gotten well and don't have that long period of convalescence, and I do want to thank Dr. Dickenson for his valuable paper, and I hope it will be gotten out, so I can read it. I am going to try that method still further. I am delighted with it. Don't try it, though, after you have started feeding in the old way —that will not do. But if you begin in the beginning and feed your patient, I believe that is the thing to do. That is my experience with five cases. Mr. President, the treatment of typhoid fever is like many other diseases. There is common sense in everything. Typhoid fever patients—some will eat, some will not. It has been my practice for several years, and I take a pride in saying it, and my friends say the same

thing, that my patients come up with more flesh than those of any of the doctors they know of, but my bill of fare is not so liberal as Dr. Dickenson's. I allow them to take a little chicken, also soup and extracts of beef. I don't go in for the manufactured extracts. I give them the chicken broth, and allow them to eat a little toast, and, where they will take it, I find my patients don't lose their appetites. I don't have but very little tympanites. I use antipyretics some, and, instead of using the bath, use ice-cold cloths over the abdomen; change them every five minutes until the temperature is decreased. I have no diarrhœa. My experience is this: My patients' bowels do not become loose. I always dread it when I start out with a patient who has loose bowels. As for using the turpentine and antiseptics, as Dr. Julian has just said, I don't see any difference between them.

I believe I could take a patient and carry him through without giving him any medicine, and he would get through. I never use the bed pan unless they are so weak they can not get out of bed.

Dr. H. B. Weaver: I don't want to make a speech. The time has come to see where we are all to get our bearings. This is a very important question, made so much more so by Dr. Dickinson's paper to-night.

Now, what is typhoid fever? All successful treatments of any disease must necessarily depend upon the etiology and pathology of that which we wish to treat. What causes typhoid fever, anyhow? Is it a local disease, manifested locally in the intestine, from some general infection, or is it a general constitutional disease, caused by a local lesion resulting from an infection of a micro-organism? That is the question. If it be a constitutional disease, caused by the bacillus of Eberth-bacillus typosus, with general manifestations, then it behooves us to get down to the very essence of the disease, by addressing ourselves to the lesion. It being a self-limitive disease, we can not eliminate the germs from the different organs. Then, what shall we do? Conduct

the patient through the disease by proper feeding. The gentleman's position would seem to me revolutionary in its character, if we attempted to give such liberal food as he has marked out. We all know that in such an insistent disease as it is,—a general supreme toxæmia of the system,—that all digestion is suspended; then how can we crowd into that stomach solid food and expect to get good results. That solid food is bound to set up irritation, and if you have, as is general in cases of typhoid fever, congestion (as has been my sad experience), you will have not only perforation, but hemorrhage and everything else; so I believe that we should stick to the liquid diet. *Feed* your patients. Feed them on *liquid* food. Why do we give liquid food? Because it is easily digested; it does not leave any residue to irritate the congested follicles until the disease has run its course, and the patient is allowed a chance to get well. That is the whole thing. Upon what does the fever depend? Upon the absorption of the toxins into the system from day to day and from week to week, and all that is necessary is to keep them within reasonable bounds, reduce the toxicity of the infection, which the bascallix are causing all the time—it is the toxins that are causing this fever. So, it is just an eking out of this poison from day to day, by the workings of the bascilli in the follicles, and we are bound to allow them to run their course, because we can not eliminate them, they are too deep under the mucous membrane to get out by antiseptic medicines, therefore we must allow them to run their full course, and when we attempt to give solid food, we are going to have baleful results, and the time has not come yet for the solid food theory.

Dr. G. T. Sikes: Mr. President, I don't want to make a speech to-night. I just want to thank you gentlemen for what has been said on this important subject. I know there are none of us present to-night, who have had twenty or more years' experience, who have not had some sad experiences in the handling of typhoid fever. We have had some compli-

cated questions to solve. We have had some stern cases that came before us.

I shall not attempt to answer Dr. Weaver as to what typhoid fever is. I don't know that. I know one thing: I know it is a bad disease; I always hate to meet it. I know that it is a thing that dies frequently in the hands of the best of us, and I know it is a thing that gets well frequently, if we let it alone, but I do say, gentlemen, that I am in great sympathy with the idea of feeding that has been advanced here to-night. I have said before this body before that my idea of treating typhoid fever was very different from that I have heard some of the members of this Society express. I have for years, in the treatment of typhoid fever, given my patients liberal diet of—not solid food, I don't mean that—but nutritious food; I mean nutritious soups, the ripe fruits. I take, for instance, a ripe peach, mash it up thoroughly and strain it through a colander. I take a ripe apple and make it into float. I am a great friend of raw eggs. (I see Dr. Register has a prejudice against raw eggs, but I have a prejudice for them, in the treatment of typhoid fever.) I use buttermilk largely. I try to feed them what they can digest. Dr. Robeson struck the keynote when he said it requires common sense. I don't know of any branch where it requires more common sense and more discretion than is required of the doctor. It requires common sense. It requires everything! I remember Professor Tiffany said a doctor required common sense and a little bit of education. I am very decided in the opinion that if we would be liberal with our patients in dieting and go through with a liberal diet, that our patients will get well in a short time, and when they do get well they will have much more strength and will be able sooner to get around and take care of themselves.

For ten years at least I have been pursuing that course with my typhoid patients. I don't say that all get well, and I venture to say the experience of no other man here is that all of his patients get well, but some of them get well.

I rarely see cracked tongue. We generally find that in perished typhoid patients. I do think we have made a mistake; I won't say we have committed a sin, but I believe we have made a mistake, when we feed them in such a manner, when we find grown people actually crying and begging for something to support life. I don't believe a patient ought to get so hungry as that, if we will just exercise the common sense Dr. Robeson speaks of and watch the condition of our patient.

It has been said to-night every patient can not take the same thing. That is true. We have to know something about what the patient can take, and that is the business of the doctor, to know what he can take, and what he can't.

I don't know that I have seen any good come from an ice bag. I believe in cold water and ice-cold sponges. I believe we can get all the cold we need out of good spring or well water. I don't see one particle of use in the use of antiseptics. I have used them, and if we use other things in discretion, they get well just about as well without them as with them.

There is one class of medicines I want to refer to—that is, antipyretics. There are a number of them on the market, made by different men, and they will reduce contamination in typhoid fever, but they won't cure your patients. It is not always the fever in typhoid that kills your patient. The majority of our patients die from exhaustion, being worn out after the high fever has passed. But these so-called antipyretics bring down the fever in our patients, but make it worse for us.

Dr. E. H. Brooks, of Reidsville: I wish to say that I do not think the patients ought to be starved, and I don't think they ought to be fed to death. Either way is fatal. It seems to me, if we could add together the general opinions advanced to-night and strike a general average, we could get a good treatment of typhoid fever.

In regard to antipyretics, I would say the choice is not the principal thing. I think diet and nursing is all that we

need. They get well in the majority of cases, anyway. I don't believe in too much food. I do not believe it is good theory or practice. I don't think a patient with typhoid his digestion is normal. I remember that I had a case with a consultant. The consultant wanted my patient to have raw oysters, tender beef and chicken. He said, "Give him that diet and we will have him riding around in a few days." We gave it to him, and he rode around all right in a few days, but it was in a black vehicle and he was at the head of the procession.

Dr. R. A. Whittaker: Mr. President, I just want to say a word in regard to this matter. I did not know anyone believed in starving typhoid fever patients, and I don't consider that giving them liquid diet is starving them. My plan for feeding these patients is to feed them all that they will stand, but never overtax the digestive apparatus and have undigested food passing through the diseased tube, but feed them all that they can digest and assimilate. I believe in giving them milk; I believe in giving them broths, chicken soup, beef soup, and, in that, I generally have plenty of rice, and in giving them these I give them some digestion medicine with it, but I always caution the straining of these nourishments, and the getting of all the fat from them. I have them thoroughly skimmed and all the fat taken away. I give those broths in a condensed form. Grease causes diarrhœa. That has been my experience, and I have all the fat taken out of these nourishments. I strain all the solid particles of the tomato out. You give them simply the liquid. I give them milk and buttermilk. I believe in feeding them, but I believe in feeding them what they will stand. I understood the doctor to say, "Give them all the diet they have been used to before." Often in the country you will find patients who are used to nothing but cabbage, corn bread and fat pork. Shall we feed them on this diet?

A. (Dr. Dickenson) Yes, if digestible.

Q. If digestible?

A. If the stomach is not weakened.

Well, sir, I was engaged, or saw, an epidemic of typhoid fever in a country district, where they had hardly ever had any sickness before, and they wanted to feed those patients. The mothers said, "You are starving my daughters to death!" I was liberally feeding them with milk and liquid diet.

I have given them grape juice, but not ripe fruit, and I recollect in one family a girl had been sick five or six weeks. She was convalescing and was going all around. She went in the kitchen one day and loaded up on beans and potatoes and things of that sort. She said, "I am going to eat a mess of these beans and potatoes if it kills me." She loaded up on them, and was dead before any assistance could get to her. In that same family a boy went through this disease. He was going all about and convalescing well. He went into the plum orchard and loaded up on plums, and in less than two days he was dead. In these attacks the ulcerations are bad, the bowels are diseased, and these hard substances go in there and cause ruptures when the patient is apparently well. I don't believe in perishing these cases, and I think that with a diet like that, where these people are used to heavy, coarse diets, I believe if you feed them you kill more than you save.

Dr. J. P. Macon, of Warrenton: We find ourselves tonight where we have been for the last forty years or more—in the middle of the deep, blue sea, out of sight of land, without anchor.

My experience has been that more patients die from two causes—overfeeding and the use of quinine. The best doctor I ever saw was an old negro woman. I was called in the country one afternoon to see a child. I met the old woman at the door. She said, "Doctor, I want you to go in and see my child." I said, "What is the matter?" She said, "I spec he has the drapsy, he is all swelled up." I went in and saw the child, all swollen, and seven children and one old man,—the most emaciated objects I ever beheld. I asked her, "What is the matter, old lady?" She said, "All my chillun and folks is had the typhide fever." I asked

her who had been treating them. She said, "I dun it myself. I giv' 'em plenty of water. You see that ol' cow? (I don't think she could give half a gallon of milk a day) I milked that cow and fed them chillun on that milk."

That was all she gave them, and they all pulled through, a little disfigured, but still in the ring. So, I gave them plenty of iron. They began eating, their blood began to thicken up, and they all got well. So you see, eight got well. If you save one out of every eight, you are doing pretty well.

I have had a great deal of typhoid fever, eight and ten cases in a house, with no one to nurse, and those I have fed abstemiously have gotten along well, and those that were fed a good deal some got along badly, and the little mounds the Doctor speaks of will tell where they are to-day.

My experience has been: Don't pay too much attention to the temperature. If you do, you will have right much hemorrhage. Reduce it after it gets above 103. Let it alone before that. Feed them well. Look after the bowels. That is the best index. If you do not have more than one or two actions a day, you will get along all right, but just as soon as you begin to feed them, and to push the feed on them, then the bowels will give way and you will have death. The best foods I have seen were the liquid peptionoids. Feed them that way, about an ounce every three hours, and most of them will get well, and don't fool with too many wet packs to the head, or you will have brain complications. We have a sad case to-day, moving around our town, which I believe was caused by the constant use of the ice pack to the head. You have got to use common sense, a little food, and plenty of water, and patience, and most of them will get well.

Dr. Templeton, of Cary: Mr. President, I like that notion, of "A little education and plenty of common sense," but the only thing is, in the doctors, the common sense they have had is, too often, too infernally common.

We have to-night two leading men's ideas upon this question, and they seem to be paradoxically opposed. Dr. Dick-

enson cures them by feeding them solid food; Dr. Register by feeding them liquid food. That simply shows what wonderful fellows we doctors are.

I don't want a reputation for telling anecdotes, but I am going to tell one. A man said to me not long ago that he was in the position of the old preacher, who was preaching on the prophets. He divided them into two classes—Zacharia, Ezekiel, and Daniel, for the major prophets, and Hezekiah, Nehemiah and Joshua for the minor prophets, and he got them all in those two classes but one, and he said: "Brethren, what are we going to do with Hagai?" And one old gentleman in the back of the hall said, "Give him my seat, I'm going to supper." (Laughter and applause.)

Dr. Brooks: Now, this discussion is very interesting, but as the Guilford County Medical Society have prepared a reception for us, I do not think it right to keep them waiting any longer, so I move that we now adjourn and resume this discussion in the morning.

(A recess was then taken.)

Thursday Morning, May 25th.

Society called to order by the President, Dr. David Tayloe, of Washington, at 9:15.

First paper read by Dr. H. D. Stewart, of Monroe, on "Prophylaxis of Typhoid Fever." (See paper.)

Dr. E. H. Brooks, Reidsville: I won't thank the Doctor for his paper, because I think that has already been overworked. I enjoyed it, however, and think there are many good points. I think he described it as it should be done; yet, I am sure, while a great many of us would say that these things should be done, so many times they are not done. So often a physician's advice is not taken—and he can but advise. I think this is due to the gross ignorance of the laity on the subject of infection.

I don't remember hearing, during this discussion, one

particular reason for the spread of typhoid infection. If this has been mentioned by anybody, I think it is important enough to be mentioned twice. I refer to the carrying of typhoid fever by flies. Where it is at all possible in typhoid fever, I insist upon placing in the sick room a screen. I think that is a precaution of the utmost importance.

I think the Doctor made another good point when he said a typhoid fever case should be fed liberally. I agree with him on that, but must say I think it must consist of liquid diet solely.

I think that we are getting a great deal out of our discussion. I think the discussion bears the same relation to the paper that a good sermon does to the congregation,—when some of the brothers get up and enjoy it. I hope we will continue to enjoy it, because I have enjoyed it very much.

Dr. H. B. Weaver: Mr. Chairman, I just want to emphasize what Dr. Brooks has said about the contamination being carried by house-flies. I remember perfectly well an epidemic we had in our county a year ago, and the spread of the disease was dependent solely upon the house-fly, because it was impossible from the situation of the dwelling in the country for it to have spread by the water supply. The house was situated half way up the mountain side, nearly three thousand feet above sea level. The water with which the house was supplied came out from under a cliff of rock; the source was bound to have been pure, but the sanitary appurtenances of the house were very defective in regard to the disposition of the sewage by drainage, etc. From that house spread to different sections of the country, two miles from the dwelling, twenty or thirty cases of typhoid fever. Across, beyond the stream, most of the cases occurred; but these parties visited the house and ate the vegetables and the food that were prepared in a little entrance to the house, where there were house-flies by the million, almost, and the surrounding privies were very defective. I have no doubt that the disposition of the contents of contaminated excre-

ment, where they were deposited before I began to attend, was the sole cause of the spread of the disease. Another physician had charge of the first case, which had returned from the army, and he pronounced it flux. The patient promptly died from flux, so-called, of the bowels, and from that first instance there were six cases in the same house, at one time, and two lives were lost, and from that family spread twenty or thirty cases,—to the people who came to visit, but did not drink any water. They positively asserted that they did not drink any water there, but they *did eat* their meals there, and there was one to three cases in that immediate neighborhood, of typhoid; and, remembering that it was stated by the surgeons of the army after the epidemic at Chattanooga, that the house-fly carried the poison, I came to the conclusion that this was the means by which these people were infected. So, I think we should emphasize to the laity the importance of excluding the fly from the food that other members of the family shall eat. Therefore, let us insist upon the prophylaxis in reference to the house-fly.

Dr. A. A. Kent, Lenoir: Just one point in the prophylaxis that has not been properly brought out, and which is, in my mind, of paramount consequence,—that is, that the germs of the disease are thrown off in the urine. It is a fact that no form of the contagious principle is thrown off by any source or any means prior to the time the doctor will be called in; consequently he gets the case into his hands before there has been very much dissemination of the disease. But it is a fact that the doctor dismisses his patient before that patient is through with throwing off the germ of the disease. Now, analysis shows that the secretions from the bowels do not contain many, if any, disease germs at the time that the patient is usually dismissed, but the urine contains a liberal amount of the germs of the disease at that time, and if the patient is turned loose without special emphasis upon that one point, you are going to have infection, sure. I wish to call attention particularly to giving that patient special in-

structions, and not only instructing, but emphasizing upon him the necessity of looking well, not only for two or three days, but for two or three weeks, to that one point,—and, as a matter of fact, the germs of the disease have been found for three months after the patient was up and around.

Dr. W. P. Horton, North Wilkesboro: I think, along this line, there has been a very important point made. I happen to be from a town in which there was, at one time, when the population was less than 500, when we had in one season eighty cases of typhoid fever. The physicians decided, from the analysis of the water (and other reasons) that these cases came from one case of typhoid fever, badly managed. Since the profession has decided that the most common spread of any disease is through the water supply (which seemed to be the most common cause at that time, and by the carrying of house-flies), we made a special study of the prevention at this time, and we decided to procure a means which was very inexpensive, by using a wooden vessel in which to place the discharge, and then bury it in the ground, and use excelsior, or some other inflammable substance (occasionally, every few days, when this dejecta was discharged into the tub), we would apply kerosene oil, and about every other day burn it out, and extinguish the vessel before it was destroyed. By doing this we could prevent the infected material from going into the water supply, and could also place a plank over the vessel to prevent the flies from getting in there, and when the patient was through, we burned the tub and all. The family generally does this, and when they do not, I have frequently done it at my own expense.

Dr. M. E. Street, Glendon: There is one point that it is the duty of the physician to see after. I have had considerable trouble along this line, and that is, to see that the instructions are carried out about disinfecting. When we have trained nurses, they do it all right; but many times we do not have trained nurses, and it has been my experience that I have had to look after that part of it just as much as look-

ing after the patient, to see that the directions in regard to the prophylaxis were carried out.

Dr. E. M. Summerell, Mill Bridge: Just one other word in regard to this matter. We see, and have learned a good deal, in the Medical Journal, lately, about infectious diseases being carried by the lower order of animals. The house-fly has gotten it in the neck, now, on all sides. Might it not be well for us to exercise some care also in regard to other vermin? It is possible, in my mind, that the infection of typhoid fever can be carried by the culex—bed-bug—and it looks to me as if we might use some care as to the exposure to these beastly vermin.

Another matter I would call your attention to, in regard to prophylaxis, is the possibility of the drinking water becoming contaminated by ordinary domestic animals,—fowls, hogs, etc. Here, the stools are not properly looked after, and, North Carolina being a rural State, a great many chances exist by which the lower animals, especially the fowls and hogs, may get at the receptacle into which or where these stools are thrown, and those stools are carried on their feet, or through the fowls' stomachs, and scattered all over the premises, and re-infect the drinking water. It looks as if it were our duty, as physicians, to look after all sources of infection, of every respect, and to guard our patient against the house-fly and other insects that are liable in any way to convey the contagion, and to look after the history of the stools during the whole case, and, as my friend, Dr. Kent, has most admirably described it, the disposal of the urine for weeks and months after the patient has apparently gotten well.

Dr. W. P. Whittington, of Asheville: I want to speak about one point in reference to prophylaxis of typhoid fever. The reason I got my hair all pulled out, came about in this way: I attacked the ice plants in Asheville, N. C., a few years ago. I only want to emphasize it. I believe that it is one of the common causes of the spread of typhoid fever in ice-producing cities.

A few years ago we had a spread of typhoid fever among the most wealthy people in the city. I said the infection might be carried by the ice. Immediately the ice companies were up at work, appointed a committee to investigate the matter, and made a report that it was impossible for ice to carry typhoid fever, as it was made from distilled water. That is true, it is made from distilled water, but they lost sight of the fact that ice, though produced from distilled water, though put in sterilized tanks, yet it is emptied out of those tanks on to the dirty floors, carried by the dirty draymen over a dirty platform, deposited in a dirty wagon, distributed by dirty wagoners, who walk in all the back-yards of the city, of high and low, and that ice, I am sorry to say, is carried into those houses without being rinsed or cleansed, and placed into the refrigerators and ice-tanks, and does carry typhoid contagion, and I am confident, in the city of Asheville, four years ago, we lost quite a number of our good citizens by typhoid fever being carried by our filthy ice-wagons into the refrigerators of our people.

Dr. Chas. Hubbard, Worthville: Mr. Chairman, we heard a lot about typhoid last night and this morning. Just after the close of the Spanish-American war, and during that war, George Sternberg issued a little pamphlet on the war, and said: "If any one will send to George Sternberg, Washington, D. C., you will get this pamphlet." Dr. Ramseur sent from China Grove for it, and it said that the spread of the disease was due to the flies.

In treating typhoid, I always use the plain vessel. I never use the bed-pan. I always keep in the vessels used a solution of potash and bi-chloride of mercury. Those are about the only deodorents I know of that are necessary. They are all right. They will do the work. If I don't use that, I use lime—a handful or two, with some water. So any discharge that is kept, that goes from the patient, goes into that solution.

I believe there is some good in lime. I have not gone back on it yet.

I would just like to take issue with Dr. Kent about that transmission. About forty or fifty years ago, or less, I read something about the discharges from the bowels. I know the bacilli can be transmitted from the urine, but I believe that is one reason why we are having hundreds and hundreds of cases of typhoid fever,—because when a man gets out, he is allowed to go where he pleases, and I think there is more danger from the discharge of the bowels.

In Wilkes County (you have all heard of it) there was an epidemic there a few years ago, at Wilkesboro. There was a case of fever in a house on the side of the hill. A hog-lot was also on the side of the hill. On the opposite side of the branch was a house, and they had a hog-lot, and those hogs used to meet together. The next thing there was a case of fever in the other house. It was a very wet season, and the hogs were very neighborly, you remember, much more so than several of we medical hogs,—and the fever came from this house over here on the hill. The stools would be thrown out, and these hogs, meeting together here, just above the spring, and it being a very wet season, these typhoid germs just floated down this way, and the result was, forty-four undoubted cases of typhoid fever within three miles.

The only way to get rid of typhoid fever is to thoroughly boil the dejections.

Dr. E. T. Dickenson: I want to make one further remark in some defense of my explanation last night of the method I use in the treatment of typhoid fever. I want to say that I came to discover this by accident, or otherwise, and I learned that typhoid fever and feeding were not incompatible, therefore I followed this up to a further extent until my number of cases reached more than one hundred, and having learned that the feeding and typhoid were not incompatible, I set about to get some theory to meet this condition, so I gave to you last night the theory that I drew from the practical test that I have made. I am sure that so small a number as one hundred cases is hardly sufficient to establish this

subject of diet, but it is sufficient to encourage me to pursue it further, and I wish to say that I do not want to humiliate myself, and make myself ridiculous, by saying that I never lost a case of typhoid fever, but a great many of the doctors have said, "If you feed, you will have little mounds about," but, in my ten years' experience, I cited the one hundred cases of which I was absolutely positive of the treatment. It has been some strain upon me to get this number of cases that I could be absolutely sure were typhoid fever. No patient that took the diet throughout the course of the disease died.

I believe there is no further explanation that I would like to make.

I am glad to see the subject of diet is more disseminated through the State than I expected, and I have met a very courteous discussion of this subject, and I thank you all for the discussions, and for the experiences, and for the way you have brought them before the Society.

I have had no complication that I considered serious, except the one I cited last night, of hyperpyrexia, and that got well. The average temperature was 104 degrees, of one person, and ran up during the week to 107 degrees, and a very sudden decline to 96.7,—that was within half an hour, and I felt sure my theory had broken down and that I had a perforation, but this patient showed no perforation whatever and made a rapid recovery. I can not conceive of the cause of the sudden dropping of the temperature, unless it was from the local application of guaiacol two hours before the sudden decline. I used ten drops of guaiacol, locally on the skin, two hours before the decline of temperature.

Dr. Weaver: May I ask a question? In the one hundred cases, did you use Widal's test?

A. In a good many I did, and a number of them I did not. I do not consider that there is any positive test in typhoid fever. The most satisfactory test that I make is the fact that the doctors around me say, "I doubt your having had typhoid fever," but I can not conceive of how I could go through ten

years, in the same community, and have no case of hemorrhage, and no serious complications, and never have a case of typhoid fever, when I have seen in consultation as many as three in one community die of hemorrhage. Those cases were undoubtedly typhoid fever. I think that is the most satisfactory test I have had, but I always make it a point to eliminate malaria, and see that the case runs the course of typhoid fever.

Dr. E. H. Brooks, of Reidsville, presented a paper on "Epilepsy—Its Pathology and Treatment." (See index.)

Vice-President: Is Dr. Winchester here? (He was not present.) Is Dr. Stewart present? (He was not.)

Paper then read by Dr. LeGrand Guery, of Columbia, on "Appendicitis." (See index.)

Dr. H. A. Royster: I always feel, when I attempt to discuss the question of appendicitis, that I should make an apology and a confession,—an apology, because I fear that it is impossible for me, at least, to say anything original or conclusive, and a confession, because I am continually changing my mind about it from day to day, and I am in constant danger of contradicting myself. Every case that I operate upon teaches me something that I did not know before, and, though the subject is the same, and the cases are similar, each one has a distinct lesson for me.

In discussing this paper we will, of course, limit our remarks to the questions at issue, and those which have been brought out very clearly are the questions of diagnosis and etiology. It is summed up in one word—infection. It is not a colic, it is a disease of the digestive organs, it has no symptomatology, like any other disease. The organism, we know, is the common bacillus of the colon, and he is a very harmless fellow if left alone, but if disturbed he is very dangerous. There are catarrhal cases, but they are simply mild infections, and if the physician looks upon those as being simply catarrhal, without an infectious agent, he is mistaken. How often do we open the abdomen, in these so-called catar-

rhal cases, and find the appendix jammed full of pus or fecal matter!

There are one or two points in the pathology which are necessary to know. One of these is, in the first forty-eight hours the disease is limited to the appendix; beyond forty-eight hours, if the fever has not subsided, the infection is extending beyond the appendix, and, after the third or fourth day, if the disease is going on, it has gotten beyond that. These facts, it seems to me, sum up the question better than any other way of looking at it. The question of symptomatology can be stated in one word—nothing. There are no symptoms in appendicitis. I mean there is no one symptom which is a distinct guide for diagnosis. We find pus cases with no temperature; we find catarrhal cases, so-called, with a temperature of 103 degrees. Who is going to be smart enough to see through four inches of fat and skin and tell what is in there? The symptoms were presented very clearly by Dr. Guery. Pain is the most important and the least understood of all the phenomena of appendicitis, and there is one point which I would like to bring out very decidedly, and that is this: A sudden cessation of pain means your patient is worse. It means, usually, a perforated appendix. I don't know how often I try to impress this upon every physician who brings a case to me. He says, "The patient did very well for two or three days. We relieved him with morphia, his pain stopped, but in two or three days he became ill again, with vomiting and high fever." It is hard for the physician to understand that cessation of pain means a perforated appendix, and that when this occurs the patient is not better, but worse, and needs immediate attention. The other symptoms have very little to do with the question. There is also this to say: A persistent mass means you have a pouring out of pus in the abdominal cavity or dense adhesions. At the 1901 meeting of this Society, the first time I had ever discussed appendicitis, some one, in the course of the remarks, asked me if I would operate for a case of colic,

and I said, "Yes, if I could cure the patient." Since that time I have noticed that in about two-thirds of my cases, there has been a history of mild attacks of colic for two or three years preceding the attack of appendicitis. In some cases we do not find this; in others it is very common. The question, "When to operate," can be ruled out, in most cases, by the surgeon, because he is compelled to operate. It is either that or nothing, and this makes us understand the reason for the assertion that the surgeon should be consulted in the beginning. It is the man who sees these cases opened on the operating table that understands them. But it is an absolute impossibility to understand appendicitis when you look at it through the abdominal wall. The question of results in the treatment, whether by one plan or another, is purely a matter of individual observation. You find one man who says the Ochsner treatment is the proper thing; another man says he operates immediately; another that he operates at any stage of the disease, and so on. The question, then, is a matter of individual judgment, and we all lose cases by whatever method we operate; and what I want to say in conclusion is, the man who does not lose cases is either a liar, or does not operate much.

Dr. H. B. Weaver, Asheville: I know well, Mr. President, that children should be seen and not heard so often, but this question is so important, and impresses me so greatly, that I want to say one word in reference to the early diagnosis in the cases which the gentleman has so fully brought out, and which Dr. Royster has elaborated further.

Now, in regard to the diagnosis of appendicitis. If we have the positive symptomotology, it is not difficult to make the diagnosis. That is pain at the McBurney's point on pressure, with or without fever and vomiting. If we have those symptoms, we have appendicitis. Now, in reference to pain. I have one case in mind I want to call your attention to, to illustrate what I want to say. A year ago I was called to see a little boy, ten years old, who had been playing ball,

and his mother said he had hurt his knee, and he was complaining of a pain in the leg continuing to the knee. I examined the boy, and told the mother I apprehended something more than a pain in the knee. She said, "What is it?" I said, "I would like to have a consultation. I think it is appendicitis." I called my friend, Dr. Whittington, and we had an examination. The pain was not at McBurney's point, but extending down from Pouport's ligament to the leg. After an examination, the Doctor confirmed my opinion, from two symptoms: continued pain, increased on pressure (there was little rigidity of the muscles and no tremor), and moderate, continued fever. He said possibly, from the symptoms the child could be carried through, but insisted upon an operation as soon as the boy was convalescent. The case did convalesce, went on for two weeks or more. Suddenly the little fellow was taken with an excruciating pain in the right illiac region. We carried him to the hospital as quickly as possible and prepared for an operation. We did operate, and when we entered the abdomen we found that local infection had taken place, and we found cavity full of pus, and a few hours afterward the little fellow was carried to the home of his father. As the Doctor well said, there are no positive signs and symptoms by which we can diagnose appendicitis.

Dr. A. A. Kent, Lenoir: I am very much puzzled, sir, over Dr. Weaver's means of arriving at the conclusion from pain in the knee that his patient had appendicitis. Now, if I should go into the country to see a patient and find him with a pain in the knee, I would be warranted, according to Dr. Weaver, in making a diagnosis of appendicitis, and calling the assistance of a surgeon. Now, I am perfectly sure Dr. Weaver did not mean to make that impression on my mind, and yet, that is the impression it did make, and I would like very much for Dr. Weaver to explain what other symptoms there were that suggested to his mind the idea of appendicitis, which, followed up, enabled him to make the correct diagnosis in the first place of appendicitis.

Dr. Weaver: My diagnosis rested on a continued pain, increased by pressure over Poupurt's ligament extending down the leg, and continued fever, with peculiar facial expression and wiry pulse,—other symptoms upon which we based the diagnosis. There was no other thing. He had not vomited, he had no constipation, and absolutely very little pain and very little rigidity of the right rectro muscle, but he was inclined to draw up the knee, and when he tried to extend the knee, he could not, because he said it gave him pain in the knee and in the muscles. The diagnosis was made on pain extending from lower section of illiam to knee; slight rigidity of muscles and continued fever, with peculiar facies and wirey pulse.

Dr. H. F. Long, of Statesville: I have been very much interested in this discussion. In a great many cases under my observation a diagnosis was made where the practitioner felt a mass, and he usually looks for that mass at McBurney's point. My experience is that a mass may be felt anywhere on the right side of the abdomen, and, in the female a mass can be detected earlier through the vagina especially if the patient be very fat.

A mass does not always mean appendicitis, because I have known cases of ruptured tube to be diagnosed as appendicitis.

I have also read very recently of a doctor mistaking a mass of undigested beans for appendicitis, because there was the undigested beans in a mass.

Dr. Guery: Mr. President, I see Dr. Winslow, of the University of Maryland, here in the hall, and would be glad if he would say something on this subject.

Dr. R. Winslow, of Baltimore: Mr. President, ladies and gentlemen:—The subject has been presented so admirably, and the remarks of the gentlemen who have followed the original speaker have been so lucid, that really one would say there is nothing left upon which to make a discussion.

As has been said, this is a subject of vast importance. It occurs more frequently in males than it does in females.

though it occurs with sufficient frequency in females, and this brings us to a point that I think is of some importance,—that is, acute abdominal troubles in the male. In the male, acute abdominal cases are very, very often cases of appendicitis, whereas in the female it is necessary to discriminate.

I am not one of those who considers the diagnosis of appendicitis as being one of extreme ease,—that is, one that can be extremely easily made. In some cases it is as easy to make a diagnosis of a case of appendicitis as it is to eat a meal, in other cases it is extremely difficult, and in many cases a mistake is made in this diagnosis. Now, the effect of pain, of rigidity, of vomiting, of temperature, is not sufficient for a diagnosis of appendicitis. With those symptoms not infrequently a mistake in diagnosis will be made. Some of those symptoms may be present, some of them may be absent, and we may or may not have appendicitis.

One of the acute inflammatory conditions occurring in the abdomen, and which may be mistaken for appendicitis, is that of obstruction of the gall track, and it is not infrequent that infections of the cystic duct of the gall bladder and the common duct may be mistaken for appendicitis, and this, particularly if there is an obstruction to the cystic duct by means of which the gall bladder becomes distended, so that it may reach down towards the umbilicus. A person with a tender abdomen, the muscles are rigid, there is pain, and it is not always easy to tell whether you are dealing in such a case with appendicitis or obstruction of the bile ducts. Indeed, it is not a matter of such great importance, for an operation is proper in both cases. When the patient is under an anæsthetic, then you can make out obstruction of the bile passages, while previous to that we can not.

We have other conditions likewise which are capable of being mistaken for appendicitis,—infections of the kidneys. A calculus passing from the kidney to the bladder, but more particularly, perhaps, pyelitic conditions may be mistaken for appendicitis, but this is perhaps not as frequent as in-

flammation of the bile track. In females it is by no means infrequent for one to be in doubt whether conditions producing pain and rigidity of the muscles is due to appendicitis or to acute difficulties of the pelvic organism. I have seen a number of cases, and have operated, perhaps, in half a dozen cases upon young women,—young women with whom I supposed the appendix to be the matter, and have found ovarian tumor. These cases simply point to appendicitis, and the appendix appeared to be normal, and they had an ovarian tumor. After examining the pelvis, an ovarian tumor of small size was found and removed.

There are a number of points in regard to appendicitis, which, for the first place, the abnormal temperature. The temperature is always unreliable in any inter-abdominal affection. A rectal temperature will often show elevation, while a mouth temperature perhaps may be normal. The pulse has great value, rather than the diagnostic sign.

I want to say here, I think there is a reaction occurring all over the country to rely more upon our apprehension of physical signs, appreciably through the eyes, through the touch, and by our unaided senses, rather than by microscopes and other scientific apparatus,—not that one need depreciate the microscope for scientific investigations of that character, but to use our sight, our fingers and unaided senses rather than scientific instruments.

In regard to the treatment of appendicitis. As soon as you can get the case, operate. If the patient is in good condition, if you can get him in twelve hours, if you can get him in twenty-four hours, if you can get him in forty-eight hours, operate. If, after three days, the patient is still in good condition, and he has symptoms of appendicitis, operate all the same, although from the third to the fifth day is put by some as being too early for a late operation, and too late for an early operation, yet in the majority of instances these cases will do perfectly well if operated on during that period. When you see the patient with a cold, clammy skin, with a

threading pulse, with a congested integument, if you operate, the patient will die. In many cases if you do not operate, if you wash out his stomach, if you abstain from giving him food, or anything by the mouth, if you put packs and ice-bag to his abdomen, if you keep him quiet and give him restricted food by the rectum—in other words, make use of the ....—in a few days the symptoms will disappear and become less severe, the patient's pulse becomes more normal, then you had better operate, and the patient will recover. When the condition has passed on to peritonitis, the condition is grave. Yet, nevertheless, our experience in septic peritonitis is improving, and is going to improve. Now, I think in the majority of these cases in which there is septic peritonitis, one of the most important things is to make an opening in the abdomen, either removing the appendix or not, get a hole in the abdomen, put a tube in the pelvis of some considerable size, let the fluids drain into the tube. Under that treatment a large majority of the cases of acute peritonitis will recover.

Dr. J. M. Templeton, of Cary: I agree with the gentleman who has just taken his seat that the diagnosis of appendicitis is not so very difficult, and believe that the conditions are something to be considered, and, while it may have been mentioned by some one who has discussed this question, it escaped my hearing, and that is, examination per rectum. Of course this is not an infallible sign, or anything of the kind, but in cases where the abdominal walls were thick, and where you can not detect a tumor on the outside, I have, in a few instances, found it by examination per rectum. I simply mention that as one of the instances.

When I get up to say something, I want to say something the others have not said, but this is what I got up to say. Mr. Chairman, I am a country doctor; I am no surgeon; I am a general practitioner, and I am a great deal more astonished than Dr. Weaver was yesterday, when he spoke of sitting back here and saying nothing,—I am a great deal more

astonished to see a body composed in a large measure, not of surgeons, but a body of practitioners, sitting here and listening to a general discussion of appendicitis and saying absolutely nothing about the general practitioner's treatment of such cases. I think the general practitioners in this assemblage ought to have taken the most of the time of this discussion, because, my experience as a physician is that a great majority of the cases of appendicitis that I diagnose (and I may be mistaken) a surgeon never sees them, and they get well, too. I dare say that ninety per cent of the cases of appendicitis, where you have the symptoms on which Dr. Royster and Dr. Winslow and Dr. Weaver would operate—the general practitioner will put them to bed, rest them, and perhaps he will starve them, as the Chicago doctor does,—feed them liquid food, put an ice pack,—but we in the country put a hot poultice, leave him there in bed a few days, and he gets better. I believe seventy-five per cent of the cases of appendicitis in North Carolina get well without any operation, and we are just as successful as the surgeons.

Understand me, though, gentlemen, I am not criticizing the surgeons. I wish I was a surgeon, and a good one, because we do see cases where nothing but good surgery will save them, and when I am satisfied, or have reason to believe that there is pus present, and the patient will consent to it, I am glad of a surgeon. I have no criticism to make of surgery, but there are many cases of appendicitis, and they belong to the general practitioner, and he can handle them just as well, and better, than typhoid fever, because I don't think anybody seems to know just what that is. It seems to me safe for a man to operate, and I don't criticize surgery; there are cases for the surgeon,—but I would just as leave call out the fire department every day there is a call of fire as to operate on a fellow that I knew did not have pus in his appendix.

Dr. R. E. Mason, of Charlotte: I would like to ask Dr. Guery whether he hunts for the appendix—whether in opera-

ting he finds the appendix sloughed off; also if he washes out the cavity that is walled off, and his method of packing, or rather of dressing. I ask this because I have not heard it brought out, and there is a great deal of difference of opinion.

Dr. W. W. Whittington, of Asheville: I only want to say to you, in reference to the case Dr. Weaver has referred to, I think the Doctor has been misunderstood as to the ideas that some have gotten on that case.

I saw the case of Dr. Weaver, and want to say the little boy was one of the most nervous children I ever saw, and it was impossible to make a thorough examination. You understood him to say all the pain was below the McBurney point. There was pain in the lower abdomen, but the child was so nervous that an examination could not be thoroughly made. The symptoms led us to believe that there was some involvement of the psoas muscle and the nerves supplying that muscle; it also led us to believe there was involvement of the appendix. There was pain, and our diagnosis of appendicitis was made up from those symptoms collectively. I have seen a number of other cases where the leg was drawn up and where the pain was in the upper part of the thigh, and the line of the psoas muscle, where it seemed almost impossible to make a diagnosis between pelvic abscess and appendicitis. After the pus packet had ruptured, and we opened the abdomen and found the appendix lying down in the right side of the abdomen, it explained to me very fully the cause of the symptoms.

Dr. R. L. Payne, Norfolk, Va.: The discussion of appendicitis, like Banquo's ghost, will never down. I had no intention of saying anything in this discussion that would prolong the agony, but much that has been said here this morning is so absolutely at variance with my experience, that I feel I can not let it go further without entering my protest. In the first place, as to the question of the value of the leucocyte count in determining the necessity for operation, I fully agree with all Dr. Guery has said in this connection.

I think it is unfair to the argument to quote Dr. Deaver as saying that he had no confidence in the leucocyte count, because we all know that Dr. Deaver is so enthusiastic that I do not think it is an exaggeration to say he would operate on suspicion.

I heard him say in a clinic the other day, "Gentlemen, whenever a man suffers with symptoms of dyspepsia, or indigestion, he has one of two things the matter with him—something the matter with his gall-bladder or appendix, and that man needs an operation." Now, I do not believe Dr. Deaver meant all of this just as he said it, and while I have implicit confidence in his skill as an operating surgeon, I would not believe he really meant all he might say in the heat of discussion.

I believe that a leucocyte count, if it be properly made, is of inestimable value in these cases. If it be made early and repeatedly, at short intervals, and there be rapidly increasing number of white cells, then the indication is for immediate operation. There can be no question about it for me, because in a large number of cases I have never seen it fail to yield most positive results, even when my operation has been based largely upon the showing of a leucocyte count, and I would not have the gentlemen assembled here to-day dismiss it as a means of diagnosis having no use. I repeat, however, it must be done early, done repeatedly and at short intervals, and then if there be an increasing leucocytosis, we may rely on it with certainty, and operate, feeling that we are doing the right thing. Another statement two or three gentlemen have made here this morning is that there is no symptom indicative of appendicitis. There are no symptoms, or perhaps I had better modify that statement and say there are few diseases characterized by pathognomonie symptoms, should you find tubercle-bacilli in the sputtum it does not follow conclusively that the man has tuberculosis; should you find the Klebs-Leoeffler bacillus in the fauces, it does not prove that the man has diptheria, but in connection with

these the association of symptoms is usually so great, so well marked, there can be little difficulty in making the diagnosis. And so in appendicitis,—pain becoming localized, in right fassa, rigidity of the abdominal wall, point tenderness (not necessarily over "McBurney's Point," because the tenderness must be located at the spot where the appendix lies), together with the constitutional symptoms which characterize a localized peritonitis, make up an association of symptoms which usually make the diagnosis easy. I can not believe that conditions of the kidney, especially those of suppurative character, can offer difficulties in the diagnosis of appendicitis, as has been suggested, unless there be an association of disease in both organs, and then usually the development is at intervals in the two organs, with symptoms so well marked for each as to make little difficulty in the diagnosis.

As to the question of pelvic trouble in women, there the difficulties are greater, but usually these may be eliminated by careful study of the symptoms before we operate. It must be rare that a case of small ovarian tumor, as cited by Dr. Winslow, could give a careful diagnostician difficulty. The absence of fever, the absence of rigidity in the rectus muscle, the negative leucocyte count, the knowledge gained by vaginal examination, the chronicity of the trouble, all make it reasonably clear that an ovarian tumor can not be considered a usual complication making a diagnosis become more uncertain, for in many of these cases we have a chronic or acute appendicitis as a complication, and only at operation can a full idea of the pathology be determined.

Dr. J. W. Long: I would like to have a word in this discussion. In the first place, I want to say the Society is to be congratulated on having heard this paper. The Doctor has covered certain phases of the field well, and I, for one, feel amply repaid for having heard him. The discussion has brought out the fact that there is a difference of opinion as to diagnosis, pathology and treatment, and this, too, is worth a great deal to us.

First as is the question of diagnosis, I will not cover the entire field. I want to agree with my friend, Dr. Winslow, in saying that often we are mistaken in some other conditions for appendicitis. I recall at least two instances in my experience where I mistook an inflamed and enlarged gall-bladder for appendicitis. In one instance the bladder was misplaced, the distal end lying a little below the normal seat of the appendix. When I opened the appendix I found a large, dark, ugly-looking body, as large as a beer bottle, which proved to be a distended gall-bladder containing nearly two hundred stones. Now, this is a case where I think it would be impossible to differentiate between gall-stones and appendicitis, but the saving feature, as pointed out by Dr. Winslow, is that both cases ought to be operated on. I recall at least one instance where I mistook a kidney for the appendix, and it had become tubercular and adherent. The attending physician thought the case was appendicitis, and I thought so, too, and operated with that diagnosis, but the saving clause here, as in the former case, is the fact that a tubercular kidney demands an operation as much as does an inflamed appendix.

I have found a ruptured tubal pregnancy, in inflamed and adherent sac piled up on top until it reached the appendix, so I want to emphasize the fact that it is possible to mistake other causes for appendicitis, but all these conditions demand an operation.

Now, there is one other point that I want to call attention to, Mr. President. There has been a great deal said here about when to operate,—that is, whether to operate within twelve or twenty-four or forty-eight hours, or three days. I want to say that it is not a question of hours or days as to when to operate for appendicitis, but it is a question of conditions. Is the infection still inside the appendix or not. If it is inside, you may operate with safety at any time, whether it is in one hour or one week,—it does not make any difference. If the infection has spread beyond the appendix,

either by rupture or by contiguity of tissue, and we have a spreading peritonitis, or the so-called "general peritonitis," then it is dangerous to operate. If we do operate in the face of this approaching storm we often have failure. I regret that the question to be decided is, is the infection still confined to the appendix?

There is another thing, and then I am done. Dr. Templeton has said this body consists largely of general practitioners. I am glad to say that to that class for many years I belonged, and I want to say this to the general practitioner, while most of my work is surgical now, there is possibly one way in which you can keep these cases of appendicitis from coming to the surgeon's knife, and if you will follow this plan possibly as large a per cent as Dr. Templeton quoted will not come to operation. That is, withhold all food and all purgatives. Now, the first inclination of the general practitioner, when he sees trouble within the abdomen, is to give a dose of calomel. He does not feel like he has done his religious duty if he does not give a dose of calomel, followed by salts or "something to work it off." That is the very thing we ought not to do, when the appendix is inflamed, and the thing to do is to withhold all purgatives, withhold all food, and, if there is vomiting, wash out the stomach. By doing that, I am sure, in nine cases out of ten, the case will never come to the surgeon, because, if they get well, they will not be operated on; they ought to be, but they won't.

Now, Oschner makes the statement, and he says he has operated three thousand times,—and he says he has never lost a case of acute appendicitis that was treated from the first by withholding all purgatives and all food. Even after these cases have had some purgatives and have had some food, if you withhold all purgatives and all food, and sustain them by rectal elimination and keep them quiet, it is astonishing how the pain and the diffused peritonitis will subside, and, after a few days, you can operate on them with comparative safety. My mortality has markedly decreased in those cases

of fulminate appendicitis, where we have a quick, widespread, diffused peritonitis, by following this plan. Formerly I operated on those cases as soon as I saw them. I think they ought to be operated on, but not immediately, because if you do, nine times out of ten these fulminate cases will die.

Dr. Guery: Mr. President, I am very grateful to the members of the Association for listening with such patience to that paper of mine, and still more am I grateful to those who so kindly discussed it.

The statement I am about to make, and I make it with all sincerity, and if there is any one thing I do believe, it is this: That surgery, and, broadly speaking, medicine, is simply a question of pathology. A man who is a pathologist may or may not be a surgeon or a practitioner, but he can be either that he elects to be. I think this is the reason there are so many differences of opinion about medical and surgical questions. Getting down to the rock-bottom, it resolves itself into a question of pathology, and this is the reason why that paper of Reginald Fitz, written about fifteen years ago (he was a medical man), first let in the light on this subject, not because he believed in operations, but because he taught us what the disease actually was, and of course the surgical and the rational treatment followed, not only logically, but of necessity.

Now, I must say that the remarks of Dr. Templeton, while very much enjoyed, still rather took the starch out of me, because, as we construe this subject, those who wait for an appendicitis to abscess before deciding to have a surgeon see the case, are guilty of the unpardonable sin. The very fact that those cases do abscess is the reason they should not be allowed to go to the point where they do abscess. It means the opening of the abdomen, drainage for six weeks, and weakness of the scar for perhaps the rest of his life, and probably the repair of a post-operation hernia.

I think the point to be understood is this: That the solu-

tion of this question lies in an early and accurate diagnosis. We do not want the case to perforate. We do not want serious cases, because there is a time when judicious intervention can prevent this.

So far as Dr. Mason's question is concerned, I will mention one point, however; that is, we do not practically irrigate the abdomen; we turn to the judicious placing of pads, and the sponging of the infected area with sponges wrung out of salt water.

I thank you, gentlemen, and wish to take this opportunity of thanking this Society, through the Honorable Secretary, for issuing to me the invitation to be present at this meeting and to read this paper. It has been a very genuine pleasure, and I have been greatly benefited by the meeting.

Dr. I. F. Hicks, of Dunn, N. C., then presented a paper entitled "Exomphalos, with Report of a Case Successfully Operated Upon."

Dr. J. R. Paddison, of Oak Ridge, N. C., presented a paper detailing an instructive surgical case, as follows: "Report of a Case of Fracture-Luxation of Spine, Operation, Recovery, Results, and Present Condition of Patient."

Discussed by Dr. J. W. Long.

Paper presented by Dr. C. M. Strong, of Charlotte, entitled "Reports of Surgical Cases." (See index for paper.)

Paper presented by Dr. J. F. Highsmith: "The Technique and Results of One Hundred Consecutive Leopasotomies."

A paper entitled, "The Treatment of Pulmonary Hemorrhage," by Dr. F. J. Clemenger, was read by title. (See index for paper.)

Dr. J. W. Long: The case which Dr. Paddison has presented to the Society was one of the most interesting I ever saw. Through Dr. Paddison's courtesy, I operated on this patient. The last dorsal and two first lumbar vertebrae

were dislocated backward, making a marked tumor at this point. The symptoms were compression of the spinal cord, as has been so graphically described by the essayist. The operation consisted essentially in making a longitudinal incision over the spinous processes, dissecting away the muscles and facea, and removing all of the posterior portion of the vertebral arches, opening the theca, thereby freeing the pressure on the cord and giving abundant opportunity for inspecting the condition of the parts. Inside the theca there was found no pus, but abundant deposit of fibrous material, showing the amount of inflammation which had been present. Microscopically the cord appeared to be uninjured, but of course there must have been grave lesions in the cord itself. The improvement began promptly, but very gradually. Indeed, there has been more improvement in the last sixty days than at any other time since the operation. It is unnecessary for me to go into details as to symptoms and amelioration of the same, since Dr. Paddison has already gone over that part. Suffice it to say that the marked improvement in this case is a sufficient justification of the operation, and is a strong argument for the same procedure in like cases. The only thing which I would do differently in a similar case would be to urge an immediate operation and not wait to see whether the patient would get well or die.

President: We try to follow this programme as much as possible. Yesterday two gentlemen wished to read their papers, and we did not allow these papers, and can not do so in this instance, although we will be glad to hear them later.

Paper then read by Dr. R. Winslow, of Baltimore, on "Diagnosis and Treatment of Tuberculosis of Kidney." (See index for paper.)

Dr. A. J. Crowell, of Charlotte: There is one point Dr. Winslow brought out in this paper that I consider a very important one, and that is, the catheterization of the ureters. In any cases of kidney trouble where you suspect tuberculosis, it is very important, for the reason that it is essential

to know if both kidneys are involved. Dr. Winslow spoke of not catheterizing both ureters in the first case reported, for fear that by so doing a healthy kidney might be infected. There is a possible danger of doing this, but I think there is more danger of doing harm by operating on a kidney that is diseased and leaving a kidney on the opposite side diseased as well. There is no way of knowing positively whether both kidneys are diseased without catheterizing the ureters. It is better to have two diseased kidneys than to have only one kidney and it diseased. It is better to have some healthy tissue in two kidneys than to have only a partially healthy kidney on one side; therefore I think the danger is infinitely more to not catheterize than to catheterize. Just lately I have had a patient in which he suffered with tuberculosis of the left kidney. The urine from the right kidney was healthy, being free from albumen, tube casts, pus and blood. From the left kidney we had all those. In that case we would be perfectly justifiable in removing the left kidney, because the urine from the right kidney showed it to be healthy. You can determine the presence of the kidney, by cystoscopic examination, when it is acting, but it may be a diseased kidney, and by catheterizing the ureters and analyzing the urine, we can determine if one or both kidneys are diseased. Of course, if you examine the urine and get tubercular bacilli, you know you have tuberculosis of the diseased kidney, and especially if you do not have tuberculous ulcer in the bladder, but you do not know that the opposite kidney is not diseased; therefore I think it is infinitely safer to catheterize the ureters, when you have tuberculosis, than to risk removing the tuberculous kidney without catheterizing to see if the opposite kidney is also diseased. Beyond this I have no criticism. I do not consider this a criticism—just my views in regard to the case, and I think it is much safer, after thoroughly washing the bladder, to catheterize the ureters, than to operate without it, and risk having a diseased kidney on the opposite side. Of course if you have one healthy kidney and the

other one is diseased, and you know it is tubercular, the thing to do is to remove it.

Dr. R. L. Payne, Norfolk, Va.: Mr. President, this is one of the most important papers we have had, and Dr. Winslow has well shown that in tubercular kidney the diagnosis is often very, very difficult. Given a case of tumor in the loins, accompanied by localized pain, by frequent micturition, by the presence of blood and pus in the acid urine, and by the presence of the tubercle bacillus in the urine, and the diagnosis is as easy as that of any other condition; but such a typical case is one of the rarest things we know of in surgery. The diagnosis of tuberculosis of the kidneys is surrounded by almost insurmountable difficulties in many cases. At the same time, when we have an association of such symptoms as these, a person in whom there is a possible tubercular history,—I mean a tubercular family history,—in whom the general health has begun to fail, who has a slight rise of evening temperature, and who has, without any other symptom, frequent and painful micherition (the bladder being excluded as the cause of such symptoms), you can be reasonably sure that you have tubercular trouble in one or both kidneys. And it is in just this class of cases that an early diagnosis is important, for I can not agree with the author of the paper that nothing short of surgery can ever be of use, for Morris, Abberman and others in authority may be quoted in support of the idea that if the diagnosis be made early general measures offer great possibilities. It is the history of such cases that much may be done by the same measures of treatment by which you deal with tuberculosis in any other organ. As regards the point my friend from Charlotte has raised, I think Dr. Winslow is absolutely correct as to the necessity of great care in catheterizing the ureters, because it is a possible source of danger, for if the bladder be infected, the catheter may convey the infection to a ureter and kidney still sound, and the catheter may create abrasions in the mucous membrane of a healthy bladder that will permit its becoming infected from the urine being discharged into it

from the diseased kidney. And I yet agree with Dr. Crowell, who said in the given case it was all important to determine whether or not the left kidney was also involved, and I would suggest (I don't know whether the idea is original or not), that this device be used: That only the ureter on the suspected side be catheterized, while the urine from the other kidney is allowed to collect in the bladder, and thus two specimens be obtained for comparison. Of course to make this of any use the bladder must be carefully washed out first and infection of the bladder from rough handling be carefully guarded against. However, unless we are absolutely sure that both kidneys are not infected, we should be exceedingly careful about any destructive operation; for, as Dr. Crowell has well said, some sound tissue in two kidneys is better than one diseased kidney. Again, if a nephrectomy is determined on, we can not be too careful that all of the infected tissue is removed. Careful investigation of the ureter must be made, and if it be diseased it must be removed in its entirety, for it is worse than useless to do a nephrectomy and leave in place a tuberculous uretor. In the first case of nephrectomy reported to-day by Dr. Winslow, he told us that before the operation was done the catheter revealed an obstruction just within the orifice of the ureter, and yet when he came to operate he did not remove the ureter below this obstruction. The fact that since the operation, painful and frequent micturition persists, is pretty fair proof that the obstruction left in the ureter was tubercular, and so, after submitting to all the dangers of a nephrectomy, the man's condition, so far as cure is concerned, is unchanged. The operation must be complete or it is useless. These points are worthy of consideration, and I think we should carefully study tuberculosis of the kidney, because of its great seriousness.

Dr. Winslow: Gentlemen, the examination of the bladder, when one kidney is diseased, will usually show the ureter of that side to be inflamed and ulcerated. I am not at variance with Dr. Crowell in regard to his remarks. I think it

is the proper thing to do, especially when blood is coming from the kidneys and you do not know what it is from. But in a case of tuberculosis condition, if both kidneys are involved, both orifices will be involved probably also. I don't think the danger is as great as it might be to catheterize both ureters, to clean the bladder, and the urine coming down there and washing it out,—I don't think it is any great danger.

In regard to the diseased ureter. As Dr. Payne says, that ureter will break down the bladder. I had a patient, and did not care to cut him from Dan to Beersheba, so simply removed that part of the ureter that was of easy access.

Paper read by Dr. A. J. Crowell, of Charlotte, on "Rectal Fistulæ." (See indext for paper.)

Dr. Peacock: I move, as it is one o'clock, and dinner time, and only a few of us present, that the discussion of this paper be postponed until after dinner, and that we adjourn until three o'clock.

Motion carried.

The afternoon session was called to order at three o'clock by Dr. Tayloe.

Drs. S. D. Booth and R. A. Whittaker, by instruction of the House, presented the President-elect, Dr. E. C. Register.

Dr. Tayloe introduced Dr. Register, the President-elect for the ensuing year, who spoke as follows:

DR. REGISTER'S ADDRESS.

Gentlemen:—I want to thank you for this compliment, this honor. To be president of the Medical Society of North Carolina, with its thousand or eleven hundred members, the personnel of which is equal to that of any other society or association in the country, is indeed a very great honor. I want, further, to thank you, gentlemen, for this evidence of your friendship, this evidence of your esteem and confidence in me. To have your friendship and your esteem and your confidence is, I can assure you, the most valued experience of my life.

With your advice and your assistance, I hope that I can discharge

the duties pertaining to this office in a way that will make the Society larger and stronger and more useful. Through the influence of this Society it has done more to build up the medical profession of the State than any other one factor, and now, with its complete organization and its very large membership, there is no reason why its influence for good should not be still more in evidence. Again, gentlemen, I want to thank you for this recognition and this honor.

The first paper was read by Dr. R. L. Payne, of Norfolk, on "Perineal Drainage in Operations for Hypospadiasis and Epispadiasis." (See index for paper.) No discussion.

Paper by Dr. St. Clair Spruill, of Baltimore, Md., on "Report of Case, Round-cell Sarcoma of Tongue." (See index for paper.)

Dr. Stevenson: There was a case in my town operated on. His speech was broken, but he could be very well understood. He got so he could eat some kinds of food all right, by the use of the tube. He still uses the tube, and, as far as any one can tell, he is in good health and getting along nicely.

Paper read by Dr. W. T. Parrott, of Kinston, on "Electro-Therapeutics of Epithelioma." (See index for paper.) No discussion.

Paper read by Dr. B. S. Moore, of Charlotte, on "The Surgical Aspect of Tri-Facial Neuralgia." (See index for paper.)

Dr. H. S. Munroe: I thank Dr. Moore for giving us a report of this case. It is a very interesting case of surgery done in our State, and is a very difficult operation. I think he deserves to be congratulated on the success he has gotten from it. I saw the case several times, and it seems to be getting along nicely. I have done that operation in the dissecting-room a number of times, and even there it is a most difficult operation. The ganglion is hard to find, the brain is hard to get into, to locate it, and it is one of the hardest things in surgery to do, and I congratulate Dr. Moore on the success he has had.

Dr. Crowell: I had the pleasure of seeing Dr. Moore operate on this patient. It is the first time this operation has been done in our State that I am aware of, and I think his work commendable. I wish to say that the hemorrhage he spoke of was not due to cutting any of the large blood vessels, or cutting into the brain tissue, but separating the duramata from the base of the skull. He did not get into the brain tissue at all, and I was very much pleased to see the operation.

Paper called for by Dr. H. M. Taylor, of Richmond, Va., on the "Operative Treatment of Aneurism." (The Doctor was absent.)

Paper called for by Dr. Wm. DeB. MacNider, of Raleigh, on "Urinary Concretions—Presentation of Specimens." (Doctor was absent.)

Paper called for by Dr. R. H. Whitehead, of Chapel Hill, on "The Anatomical Basis of Heredity." (Doctor was absent.)

Paper by Dr. Watson S. Rankin, of Wake Forest, on "The Bearing of Recent Theories of Immunity on Therapeutics."

Paper was called for by Dr. John Roy Williams, of Greensboro, on "Bacillus by Staining and Its Clinical Importance." (Absent.)

A paper entitled "The Old and the New in Medicine," by Dr. J. A. Reagan, was read by title. (See index for paper.)

Paper called for by Dr. Edward Jenner Wood, of Wilmington, on "Pathological Report of a Case of Chronic Interstitial Pancreatis." (Page .....)

Paper by Dr. S. M. Crowell, of Charlotte, on "Etiology of Chronic Hepatitis." (See index for paper.)

Paper was then read by Dr. W. P. Whittington, of Asheville, on "Tubal Pregnancy." (See index for paper.)

Motion was made to discuss Dr. H. S. Lott's paper, which is on the same subject, and Dr. Whittington's together.

Paper read by Dr. H. S. Lott, of Winston, on "Surgical Treatment of Ectopic Gestation." (See index for paper.)

Dr. E. T. Dickenson: I have enjoyed both of these papers very much. I want to call attention to one point. I have seen two cases in the last three years. It is hard to get symptoms to justify an abdominal section, and for the purpose of diagnosis I think a vaginal incision is the proper method for diagnosis of these cases, when we are very suspicious of ectopic gestation and rupture. There is no risk in entering by the vaginal route, and if the blood is found sufficient to diagnose tubal pregnancy, this drainage is the thing we need, after the abdominal section. Very recently a case has come to my attention, and I fear the woman will lose her life from the failure to make this diagnosis in time. It was supposed to be a miscarriage, and there was a great deal of hemorrhage. I was called and curetted placental tissue from the uterus and packed the uterus with iodoform gauze, and she made a good recovery for a few days, but fever set in and the woman got in extreme condition in about five days, with very high temperature. My partner, Dr. Moore, was called to the case (it was his to begin with), and opened the posterior cul de sac and found sufficient evidence to justify us in believing that there had been a rupture. He proposed abdominal incision when the woman gets in such a condition as to warrant it.

This case would have been saved, I am satisfied, if the precaution had been taken to enter the abdomen at the time, although there was little suggestion of pregnancy or rupture at first. The only thing was the extreme shock. We gave salt solution by the veins to bring the patient up. She would have been able, in twenty-four hours, to have stood a laparotomy, but certainly it was an error to wait for five days for the entering of the posterior cul de sac.

Dr. Whittington: Mr. President and Gentlemen, I want to add a few words in reference to the frequency of the occurrence of tubal pregnancy. Dr. Dickenson has remarked that it was a condition of frequent occurrence. I believe that is the truth, and I believe that we are very often to blame for not making a diagnosis, and I want to emphasize

the importance that we are here for the benefit of each other, and, as I am a little older and a little bolder than some who are just starting out, I want to emphasize the importance of a thorough examination of every case pointing to pelvic disease or irregular pregnancy that you meet with. The first case that I met with when I began to practice, I buried before I made a diagnosis. I have ever since made a thorough investigation of my cases. I have operated on three of my own cases in the last twelve months, and have seen a number of others in consultation with other physicians.

I believe in operations through the abdomen, because the proper thing to do is to ligate the bleeding vessels, and where you have adhesions of the tubes it is impossible to do that through the vagina. I have never seen a case yet where I suspected hemorrhage and rupture preceding that hemorrhage, that I did not find the opening through the abdomen was the better method, and where we have a small tumor, as was the case in one of the cases reported a few minutes ago, the size of a walnut, it seems to me that we ought to make the diagnosis, especially if it is low down in the pelvis. Of course we make the incision through the abdomen, which is the proper thing to do. I have not had the experience in vaginal work that some have had. Where putrefaction and advanced decay has taken place, I think the vaginal route is the better.

Now, in reference to drainage. I never drain these cases where I find it is supposed to be a clear case. If we have advanced degeneration and pus, it is the best to drain.

Dr. H. S. Lott, Winston: Mr. Chairman, I just want to say the Doctor was correct in his criticism. As a rule, a mass the size of a walnut should be detected through the vagina. I object to the fact of the extreme sensitiveness of the woman, that she would not lie still long enough to make a thorough examination at all. A mass that size should be detected.

Just a word in regard to the exploratory incision through

the vagina, or anything else. I like it because it is so easy, it is so tempting to just make a hole and peep in. We want to educate our fingers—get brains in the ends of our fingers. We neglect that. The incision is so easy,—that is the objection to it, and nothing tends to lower the standard as the exploratory incision anywhere.

Dr. Cyrus Thompson, Jacksonville: Mr. President, I desire to ask Dr. Lott one question as to his second case. You were certain by the feeling of the fœtus through the vagina, were you?

A. Yes, sir.

That would seem, Mr. President and gentlemen, to be a very good proof of an ectopic gestation, but during the last year,—I do not remember the exact date,—my friend, Dr. Cox, of Jacksonville, had a case to which he called me in consultation, and afterwards he and I together called a friend—Dr. Nicholson—on the case. We found the feet, or what we thought were the legs or arms, through the vagina, in a posterior cul de sac; we prepared the woman for an abdominal section. We had found that there was a cord protruding from the os-uteri, and said to Dr. Nicholson, "Go ahead and deliver the placenta and clear the uteris before we make the abdominal section. There was not one of us three, after a careful examination, but were satisfied the fœtus was outside of the uterus, because we could feel it in the posterior cul de sac through the vagina. We dilated the os, and Dr. Nicholson delivered the placenta and the fœtus, and we had no abdominal section to make, and the woman got well.

The Doctor makes the statement that he has an ectopic gestation, but that he has delivered the placenta from the uterus. I don't say that that is not so, but it is a very peculiar condition of things.

Paper read by Dr. H. A. Royster, of Raleigh, on "How Far Shall We Go in Performing Multiple Gynarcologic Operations in One Sitting?" (See index for paper.) No discussion.

Paper called for by Dr. Southgate Leigh, of Norfolk, on "The Treatment of Complete Laceration of the Perinæum." (Dr. Leigh was absent.)

Paper called for by Dr. Thomas Stringfield, of Waynesville, on "Eclampsia." (Dr. Stringfield was absent.)

Paper read by Dr. F. R. Harris, of Henderson, on "Puerperal Eclampsia." (See index for paper.)

Dr. R. E. Mason, of Charlotte: Mr. President, it has given me a great deal of pleasure to listen to this paper, and, as a whole, I can give it my endorsement. I have had five cases of puerperal eclampsia—three of them in the first year's practice. The first case of obstetrics that I had in private practice was a case of puerperal eclampsia. I have had five cases and not one death. Four living children.

In regard to chloroform. I can not agree with the author of this paper. If chloroform is given, however, it must be given to the surgical degree, and held there. But to go back. I will give you my line of treatment, and will then say why I think the chloroform should not be used. When I see a case of puerperal eclampsia, it is, I am glad to say, not my fault, and it is, in convulsions. All of my cases were emergency cases. The first thing I do is to examine the pulse. If the pulse is full, quick and bounding, Norwood's tincture of veratrum viride, given hypodermically, is the remedy. If the pulse is weak, then morphia, one-half grain doses, is the remedy. Why it should be given in one-half grain, instead of one-quarter grain doses, in my opinion, is because this poison that is in the system overwhelms it like a wave, therefore you must put your bulwark high enough so that it can not be overcome.

The next thing I do is to empty the rectum, giving normal saline solution, using that to empty the rectum. Chloral, in 15, 30 or 45 grain doses, with double the amount of sodium bromide, is given by mouth, if it is possible to give it; if not, per rectum. That will be absorbed in a very short time; then I give a quart of normal saline solution per rectum.

This is taken up almost as quickly, in my opinion, as if it is given under the breast. Of course it would be better to give it by the vein, but as a rule these cases are where one man has to deal with them, and he can not do everything at once. Then, with veratrum, if you use veratrum, or with morphia, if you use morphia, you have as a rule, no more convulsions. That has been my experience, and that is what you will find, (those who know best) of Norwood's tincture of veratrum viride treatment, will tell you. Then, after the patient is free of convulsions, deliver the woman as quickly as possible. Follow up your normal solution every three hours, one quart —you can not get too much, in my opinion—and the family can do it, and you can leave and attend to your other cases.

You will find that hot packs are advocated. My experience has been that veratrum viride, hypodermically, does the work well without a hot pack, and it is a great deal more convenient. You will find that croton oil is advocated. I have never given croton oil, but I give calomel, in one ten-grain dose, as soon as I can administer it. This, gentlemen, in my mind, not only rids the intestines of fermenting material, but we know that it is a diuretic, and both of these measures will tend to relieve eclampsia. Although we do not know the cause, we know this does tend to cure it.

I spoke of another drug—chloroform—that I would not give it, because it retards labor, and unless it is given to the surgical degree you do not have enough chloroform to have any effect before the convulsion is on. It takes three, four or five minutes for chloroform to have any effect. The prodromal symptoms of the convulsions, and the convulsions, come on in less than one minute, therefore chloroform is of very little use. I used chloroform in one case, and I did not use it in any other, except in the one case in which I lost the child. I think I have studied this question, gentlemen, if you will pardon me, very closely.

Naturally the first case of obstetrics a man has, being a case of puerperal eclampsia, he will want to know everything he

can get on the subject, and I availed myself of many books and every view that I could get from the old practitioners. As I said, three cases were in my first year's practice. That is a little more than the average practitioner has, and I have thought over the matter as I have gone further and further into the practice of medicine, and the misuse of chloroform has been impressed upon me. Another reason why chloroform should not be given, the patients usually die from a spasm of the respiratory muscles. During this spasm, if chloroform is crowded on the patient, they are getting less and less of oxygen, and they need every bit of oxygen—fresh air—they can get. If chloroform is given, just to ward off the convulsions, then we have labor—not retarded too much, but we have little effect from the drug. If it is given to the full anæsthetic degree we have labor retarded, we have post-partem hemorrhage liable to occur, and have to use forceps, where, if we give Norwood's tincture of veratrum, my experience has been that we do not have to use the forceps. Norwood's tincture of veratrum viride is not the heart depressant that many would make you think. Many of the authors tell you that veratrum viride is a greater heart depressant than aconite. That, gentlemen, I can not believe. Some authors call it poke-root, which shows how little they know. I have noticed time and time again the treatment of puerperal eclampsia in which the doctor gave morphine and atropine, and the patient always died—at least that is my recollection. You lock up the secretion of sweat, the poison is retained in the system, and the patient is overwhelmed. The opposite is gained by giving the hot-pack or pilocarpine. One more thing, and that is that Norwood's tincture is especially good because it is a depressant of the anterior cornua of the spinal cord. We have the convulsion coming on because these cells are stimulated. When the pulse is reduced to 60, it also has the additional effect of depressing the anterior cornua, and the patient is relieved of the convulsions and they do not recur after delivery. As we know, if the convulsions occur

after delivery they are much more grave, and in these cases, though I have been unfortunate enough to have one or two with post-partum convulsions, yet they were relieved with this same veratrum treatment followed up from time to time to keep the pulse at or below 60 or 70—something close to 60. With a pulse about 60, you can not make your patient have a convulsion.

Dr. I. W. Richardson, of Greensboro: I believe the difference of opinion as to the treatment of eclampsia arises from the fact that eclampsia appears under many conditions. I have seen eclampsia months before it was time to deliver the child. In that sort of case I do not consider it advisable to deliver the child. Wait until the time comes, and after the use of all these drugs there are times when all the remedies mentioned do some good,—the patient gets better, gets well. I just got up to say that I believe the remedy which has been most universally used has not been mentioned. I have seen many cases of eclampsia, and believe it is most universally remedied by venesection.

Dr. E. T. Dickenson, of Wilson: Mr. President, I am especially impressed with the truthfulness of Dr. Harris' statement in the paper throughout. All of my cases died while I was waiting on the veratrum viride and morphine, and I reversed my judgment, and the next case I got I proceeded as Dr. Harris has stated, and I have had as many to live. I believe veratrum viride and morphine would be valuable remedies did we not have so much more valuable remedy, in Dr. Harris' remedy. I believe this is so much superior that morphine and veratrum viride become extremely dangerous remedies. As some gentleman has seemed to infer that he means to induce labor, I think that he means to deliver with instruments—to dilate the cervix and deliver. I always do that in one hour. I have never taken more than one hour to deliver a case after I have gotten to it.

Dr. H. M. Tucker, Raleigh: Mr. President, just a few moments. I agree thoroughly with the Doctor's paper, and

I do want to criticize a few things Dr. Mason said about diaphoresis. I am surprised that any one here uses pilocarpine as a diaphoretic in eclampsia. I think everyone most puts it down in medicine as a thing of historical interest. A very common cause of death is pulmonary œdema. As regards purgatives, I can not agree with him on calomel; I think it is bad.

If there is one thing you want to do in eclampsia it is to eliminate by the bowels in the first twenty-four hours. The elimination of the kidneys amounts to nothing much, and you have to depend upon the bowels. I don't think anything can equal sulphate magnesia or epsom salts. Give it hot, and every fifteen minutes, a spoonful to a dose. If your patient can not swallow magnesia, croton oil is the remedy. As regards chloroform: I don't believe most people would say not to give it during the convulsion. It can do little or no harm, and can do your patient much good. So far as the effect it has upon the respiratory muscles, it has rather a good effect, because you have a contraction of the muscles and you want to relax the patient. I don't think chloroform all the way through would be a good thing. The secret of morphine is to give it in large doses, and you give up to as high as two and three grains in an hour's time, and you must give large doses.

Dr. H. B. Weaver, of Asheville: Mr. President, I have but a few words to say. I thank the gentlemen for discussing this paper. I want to say that I consider elimination of this poison all-important. Salt water solution by the bowels is all-important, and I want to say I use chloroform. If you use it continuously, gentlemen, you will do much harm, but you want to use chloroform to relax the condition, and then, gentlemen, my experience is to deliver that child, and the sooner you do it, the better the patient is. I tell you I have been called over and over again to see people who were suffering with eclampsia, out in the country some distance, and, gentlemen, they invariably died for want of timely aid.

Where they have had several convulsions and have not been controlled promptly, they die,—not all, but the majority of them. If you use chloroform, not expecting to use it for any length of time, but to control the spasm at the time, and get your patient relaxed, you will save them. Veratrum viride controls the pulse, and if you will do that, and deliver the child, my experience is that where I am on the spot, my patient gets well.

Paper by Dr. J. A. Williams, entitled "Symphisotomy—Report of a Case," read by title. (See index for paper.)

Dr. Way: There was an additional paper on this subject received at the Secretary's office after the programme went to press. I refer to a short paper on Obstetrics, by Dr. Tucker.

Dr. H. McKee Tucker, of Raleigh, then read a paper entitled, "Obstetrics, a Surgical Art." (See index for paper.) No discussion.

Dr. M. L. Stevens, of Asheville, then read a paper entitled "A State Society for the Prevention of Tuberculosis." (See index for paper.)

Dr. Weaver: Mr. President, I move, sir, in furtherance of this subject, that the suggestions the Doctor has just related be adopted as resolutions of this Society, asking the President in his judgment to appoint a sufficient committee which shall call a meeting at a convenient time to organize this society.

Dr. Way seconded the motion, but went on to state:

Mr. Chairman, I have no objection to the formation of such a society. The fact is, I approve it, and if such a society is formed in North Carolina, I shall most likely be a member of it, and aid it and assist it with my work and influence, and endeavor to promote the use and purposes for which such a society is created, in every possible way; but I do not approve of the general meeting of this Society, just at the close of this session, when there are so few of us here, committing the Society to the organization of a society of that kind, or of any

character whatever, so I would like the gentleman to modify his resolution by inserting that the "President appoint a committee to consider the advisability of the formation of such a society, and report to the next session of this Society." The tuberculosis will not all be cured before that time, and it will be a more deliberative and proper action than at this late end of the session, to commit this Society to a movement of that sort, and I would favor a motion of this kind.

Dr. Crowell: Mr. President, if I understood Dr. Weaver, that was his motion—that a committee be appointed to consider the advisability of this organization. Of course we all know it is needed. I know Mecklenburg County has been talking, in a way, about providing for tuberculosis patients.

Dr. Stevens: Mr. Chairman, I agree with Dr. Way in what he said. This meeting is no longer representative. So many have gone home, and the modification will simply cover the purpose. The matter was simply to start the ball rolling.

President: All in favor of the motion as amended by Dr. Way say Aye; all opposed, No.

The motion was then carried.

Dr. A. C. Harrison, of Baltimore, then read a paper on "Surgical Treatment of Gastric and Duodenal Ulcer." (See index for paper.) There was no discussion.

The President then announced the following appointments of Chairmen of Sections for the 1906 meeting in Charlotte, and urged the gentlemen receiving the appointments to use every effort possible to have a good selection of well-written papers for the 1906 programme:

Dr. Lawrence E. Holmes, Asheville, Anatomy and Surgery.
Dr. J. Clegg Hall, Boardman, Materia Medica and Therapeutics.
Dr. E. C. Boyette, Mt. Holly, Practice of Medicine.
Dr. S. A. Stevens, Monroe, Physiology and Chemistry.
Dr. Cyrus Thompson, Jacksonville, Obstetrics.
Dr. C. W. Mosely, North Wilkesboro, Gynæcology.
Dr. W. F. Hargrove, Kinston, Medical Jurisprudence and State Medicine.

Dr. Thomas R. Little, Greensboro, Pathology and Microscopy.
Dr. Robt. L. Gibbon, Charlotte, Railway Surgery.
Dr. E. H. Brooks, Reidsville, Pædiatrics.

Dr. Sikes: As there is no further business before the house, I move that we adjourn.

Dr. Way: I want, by a rising vote, to have this Society express our thanks to Dr. McIver for the specially delightful welcome that he accorded us on the day of our arrival; for the very pleasant entertainment given in our honor at the institution over which he presides with such grace and erudition, to the Guilford County Medical Society, the Greensboro daily papers and the press of the State, to the courteous hotelists and citizens of Greensboro in general, who have shown us such marked hospitality since we came here a few days ago.

The motion was seconded and carried with enthusiasm.

Dr. Way: I also personally, as we part, at the conclusion of what has been the most largely attended meeting of the Medical Society of this State, in its history, want to express my appreciation of the earnest co-operation that has been given by so many of the gentlemen to make the programme and this meeting a great success, and I want us to go on during the year with our work in the home branches of the State Society, that is, in the County Medical Societies, and when May, 1906, rolls around may we all meet in the fifty-third annual session in Charlotte and do as we did here this week—have the greatest programme and most largely attended and successful meeting in our history. I thank you, gentlemen.

The General Meeting then adjourned *sine die*.

HOUSE OF DELEGATES.

Minutes of the Second Annual Session (Fifty-Second of the Society) Held in Greensboro, N. C., May 23, 24 and 25, 1905.

The Second Annual Session of the House of Delegates of the Medical Society of the State of North Carolina met in Benbow Hall in the city of Greensboro, N. C., at 3:20 p. m., May 23, 1905.

Called to order by the President, Dr. David T. Tayloe, of Washington, N. C.

Roll-call by the Secretary, Dr. J. Howell Way, of Waynesville, N. C., indicated the presence in attendance upon the session the following members of the House of Delegates:

President—Dr. David T. Tayloe.

Vice-Presidents—Drs. C. A. Julian, John T. Burrus and I. W. Faison reported present in the general meeting.

Secretary—Dr. J. Howell Way.

Treasurer—Dr. G. T. Sikes.

COUNCILLORS.

First District—Dr. Oscar McMullan, Elizabeth City.
Second District—Dr. James M. Parrott, Kinston.
Third District—Dr. Frank H. Russell, Wilmington.
Fourth District—Dr. Albert Anderson, Wilson.
Fifth District—
Sixth District—Dr. Hubert A. Royster, Raleigh.
Seventh District—Dr. Edward C. Register, Charlotte.
Eighth District—Dr. David A. Stanton, High Point.
Ninth District—Dr. Thomas E. Anderson, Statesville.
Tenth District—Dr. James A. Burroughs, Asheville.
Dr. J. F. Highsmith, Councillor for the Fifth District, noted absent.

Delegates from the following County Societies present:

FIRST DISTRICT.

Currituck—Dr. Stuart M. Mann, Moyock.
Camden-Pasquotank-Dare—Dr. W. W. Griggs, Elizabeth City.
* Chowan, Tyrell, Hyde, Jones, Alleghany.

* County Society not organized.

Perquimans—Dr. Thomas S. McMullan, Hertford.
Gates—Dr. George C. Brooks, Sunbury.

SECOND DISTRICT.

Hertford—Dr. J. Rainey Parker, Union.
Martin—Dr. J. B. H. Knight, Williamston.
Pitt—Dr. E. A. Moye, Jr., Greenville.
Bertie—Dr. Charles J. Savage, Windsor.
Lenoir—Dr. R. A. Whittaker, Kinston.
Craven—Dr. R. Duval Jones, Newbern.
Pamlico—Dr. O. C. Daniels, Oriental.
Carteret—Dr. C. S. Maxwell, Beaufort.

THIRD DISTRICT.

New Hanover—Dr. George G. Thomas, Wilmington.
Onslow—Dr. J. L. Nicholson, Richlands.
Duplin—Dr. O. F. Smith, Magnolia.
Sampson—Dr. J. O. Matthews, Taylor's Bridge.
Columbus—Dr. S. M. Withers, Chadbourn.

FOURTH DISTRICT.

Northampton—Dr. Henry W. Lewis, Jackson.
Halifax—Dr. F. M. Register, Halifax.
Nash—Dr. W. H. Whitehead, Rocky Mount.
Edgecombe—Dr. J. M. Baker, Tarboro.
Johnston—Dr. L. D. Wharton, Smithfield.
Wilson—Dr. E. T. Dickenson, Wilson.
Wayne—M. E. Robinson, Goldsboro.
Green—Dr. G. C. Edwards, Hookerton.

FIFTH DISTRICT.

Cumberland—Dr. A. S. Rose, Fayetteville.
Robeson—Dr. T. L. Northrup, St. Pauls.
Scotland—Dr. W. T. Pate, Gibson.
Richmond—Dr. G. W. Brown, Raeford.
Montgomery—Dr. T. E. Asbury, Asbury.
Moore—Dr. W. A. Monroe, Sanford.
Harnett—Dr. S. P. J. Lee, Dunn.
Chatham—Dr. J. D. Edwards, Siler City.

SIXTH DISTRICT.

Wake—Dr. A. W. Knox, Raleigh; Dr. Wm. DeB. McNider, Raleigh.
Franklin—Dr. S. P. Burt, Louisburg.
Warren—Dr. P. J. Macon, Warrenton.
Vance—Dr. F. R. Harris, Henderson.
Granville—Dr. S. D. Booth, Oxford.
Person—Dr. W. A. Bradsher, Roxboro.

Caswell—Dr. J. F. Badgett, Blackwells.
Alamance—Dr. W. R. Goley, Graham.
Orange—Dr. R. H. Whitehead, Chapel Mill.
Durham—Dr. N. M. Johnson, Durham.

SEVENTH DISTRICT.

Anson—Dr. T. F. Meisenheimer, Morven.
Union—Dr. R. Armfield, Marshville.
Stanley—Dr. T. A. Hathcock, Jr., Norwood.
Mecklenburg—Dr. George W. Pressly, and Dr. C. M. Strong, Charlotte.
Cabarrus—Dr. D. G. Caldwell, Concord.
Lincoln—Dr. R. W. Petrie, Lincolnton.
Gaston—Dr. E. C. Boyette, Mt. Holly.
Cleveland—Dr. S. S. Royster, Mooresboro.
Rutherford—Dr. E. B. Harris, Rutherfordton.

EIGHTH DISTRICT.

Rockingham—Dr. J. A. Williams, Reidsville.
Guilford—Dr. D. A. Stanton, High Point, and Dr. M. F. Fox, Guilford College.
Randolph—Dr. C. E. Hubbard, Randolph.
Forsythe—Dr. D. N. Dalton, Winston.
Stokes—Dr. J. Thomas Smith, Westfield.
Surry—Dr. R. E. L. Flippin, Pilot Mountain.
Yadkin—Dr. E. M. Hutchins, Booneville.
Wilkes—Dr. Charles W. Mosely, North Wilkesboro.

NINTH DISTRICT.

Davidson—Dr. D. J. Hill, Lexington.
Caldwell—Dr. A. A. Kent, Lenoir.
Davie—Dr. J. W. Rodwell, Mocksville.
Rowan—Dr. J. Stevens Brown, Salisbury.
Iredell-Alexander—Dr. M. R. Adams, Statesville.
Catawba—Dr. J. A. Childs, Hickory.
Burke—Dr. P. L. Murphy, Morganton.

TENTH DISTRICT.

Buncombe—Dr. M. H. Fletcher, and Dr. L. B. McBrayer, Asheville.
McDowell—M. F. Morphew, Marion.
Madison—Dr. Frank Roberts, Marshall.
Haywood—Dr. Thomas Stringfield, Waynesville.
Transylvania—Dr. Goode Cheatham, Brevard.
Jackson—Dr. D. D. Hooper, Tuckasegee.
Macon-Clay—Dr. Fred. L. Siler, Franklin.
Cherokee—Dr. S. C. Heighway, Murphy.
Graham—Dr. R. J. Orr, Robbinsville.

The annual address of the President, delivered before the general meeting at the morning session, was called up, and, on motion, the following committee was appointed thereon: Drs. Thos. S. S. McMullan, Thos. E. Anderson, Albert Anderson.

Dr. Way presented the annual report of the Secretary, as follows:

GREENSBORO, N. C., May 23, 1905.

To the President and Members House of Delegates, Medical Society of North Carolina.

GENTLEMEN: In a few brief words I present you this report as your Secretary—my second since the reorganization of the Society.

In doing so I wish to congratulate you upon our continued growth and prosperity.

At the meeting in Raleigh one year ago it was my pleasure to report when we had been one year under the new Constitution the organization of 73 counties up to that date.

Since then there have been organized additional county societies until now we have in North Carolina 86 local societies, including in their membership almost all of the physicians actively engaged in practice in 92 of the 97 counties of the State.

At present only the counties of Alleghany, Chowan, Hyde, Jones, Tyrell remain without a local organization of their medical men.

Since our last meeting charters have been issued to the following County Societies:

Lenoir—President, R. W. Wooten, Kinston; Secretary, W. F. Hargrove, Kinston, May 21st.

Surry—President, J. B. Smith, Pilot Mountain; E. M. Hollingsworth, Mt. Airy, Secretary, June 20th.

Carteret—President, C. N. Mason, Harlow; Secretary, C. S. Maxwell, Beaufort, September 24th.

Washington—President, W. H. Hardison; J. L. Hassell, Creswell, June 21st.

Pamlico—G. S. Attmore, Stonewall; H. P. Underhill, Secretary, July 30th.

Gates—President, E. F. Corbell, Sunbury; George C. Brooks, Sunbury, October 14th.

Rockingham—C. B. McAnally, President, Madison; Secretary, G. M. Ivey, Wentworth, August 21st.

Stanly—T. A. Hathcock, President, Norwood; J. M. Lilly, Secretary, Norwood, August 1st.

Durham—A. Cheatham, President; George H. Ross, Secretary, both of Durham.

Bertie—President, Wayland Mitchell, Lewiston; Secretary, E. B. Horton, Aulander, January 8, 1905.

Warren County Society—President, Dr. P. J. Macon, Warrenton; Secretary, Dr. B. R. Browning, Littleton.

Chatham—President, Dr. R. W. Palmer, Gulf; Secretary, Dr. H. T. Chapin, Pittsboro.

In addition to the organization and chartering of the above some interest in the matter has been exhibited by the profession in some of the other counties, and it is more than likely that ere the end of the year that additional county societies will be organized.

But the work of organizing the county societies may now be considered as practically finished, and from now on every energy should be directed to perfecting the county organizations and bringing the doctors composing them into closer, more sympathetic relations, for only in the cultivation of such relations can the full strength of the profession be developed. To that end we should all strive.

While the work of all the county societies is not conducted with that systematic, earnest spirit which invites success, yet the majority of them are doing work that has been needed in the local profession for years, and I am sure the influence of the county societies in promoting a better feeling among the members of the profession is manifest.

Most of them meet monthly, a very few semi-monthly, a few bi-monthly, one or two quarterly, and there are a very few that meet rarely or at irregular intervals or not at all. Of course, it is very evident to any one that in the more sparsely settled counties, with perhaps only half a dozen legal practitioners, the meetings cannot be conducted with the regularity which characterizes the society located in our largest cities.

The question of a fee-bill has agitated several of our societies the past year, and I have often been appealed to for my opinion relative to various questions which might be developed in this connection.

I have always taken the ground that a fee-bill was a most excellent institution if merely suggestive or permissive, but have advised against the adoption of "iron-clad fee-bills," believing that all schedules of professional fees should possess sufficient elasticity to enable the professional gentleman to make use of them to his own advantage, and likewise never to the detriment of suffering humanity or of one's professional confreres.

My correspondence has been much larger the past year than the first year of work under the new Constitution—frequently a dozen letters relative to society affairs coming in a single mail—but I have endeavored to give as much of my time as was needful to assist the gentlemen making enquiries to receive the information desired.

The integrity of our State medical laws yet writhing under the severity of the learned Chief Justice's decision, were attacked by some of our friends during the winter in an effort to promote the cause of irregular medicine. Prompt action on the part of the officers of the organized profession with concerted and organized action by the membership of the county societies throughout the State, I am pleased to say happily defeated these attempts. In this connection it is well to remember the regular medical profession of North Carolina has been in the past peculiarly favored in that there has been entrusted to our care responsibilities greater than in most States—there is no need for me to say the having of these responsibilities should render us at all times mindful to do our full duty toward the people of the State that none of our valuable prerogatives be lost. Discretion, tact and common honesty coupled with the scientific spirit in medicine which prompts the true physician to be a true man and a good citizen will continue to constitute our safeguard against such attacks in future—let none of us believe they will not be made, but rather let us look well to our local organizations, that when an attempt is made to enact medical legislation hurtful to the best interests of the people of this commonwealth, the voices of a united profession will be heard and speaking in no uncertain tones that will give assurance that all's well to timid legislators.—J. Howell Way, Secretary.

Dr. Way called up the matter of the adoption by this body of the resolution of the State Board of Medical Examiners relative to the vital importance of a proper preliminary education for students of medicine, but action thereon was deferred until the copy of the resolution in writing could be presented to the House.

Dr. E. T. Dickenson presented the following, which he moved as an amendment to the Constitution of the State Medical Society:

Resolved, That the physicians of the State Board of Health and the State Board of Medical Examiners be added to the House of Delegates.

Favored by Dr. J. A. Burroughs.

Opposed by Drs. Murphy and McMullan.

Motion to pass the resolution and place the amendment on the way for consideration by the component societies defeated by a large majority.

Motion carried to dispense with formal reports from the county societies this session.

On motion, a recess of three minutes was declared by the President to enable the members of the House from the various Councillor Districts to get together and designate their member of the Committee on Nominations.

Business being resumed, the following were designated by their respective districts to serve as Committee on Nominations:

First District—Dr. Oscar McMullan.
Second District—Dr. James M. Parrott.
Third District—Dr. Frank H. Russell.
Fourth District—Dr. Albert Anderson.
Fifth District—Dr. S. P. J. Lee.
Sixth District—Dr. Sam. D. Booth.
Seventh District—Dr. S. S. Royster.
Eighth District—Dr. D. A. Stanton.
Ninth District—Dr. P. L. Murphy.
Tenth District—Dr. J. Howell Way.

Dr. T. S. McMullan introduced a resolution relative to the matter of uniformity in professional fees for old-line insurance examinations, which, after some discussion by Drs. Knox, J. Stevens Brown, Burroughs, Oscar McMullan, W. H. H. Cobb, Jr., Kent, Albert Anderson, and the offering of various amendments and substitutes, was referred to a special committee, on motion of Dr. Knox, which committee is to carefully consider the whole matter and report to the House later in the session.

President Tayloe designated the following Committee on Insurance Examinations: T. S. McMullan, A. W. Knox, James A. Burroughs.

On motion, a recess was taken until 10 a. m., Wednesday.

WEDNESDAY MORNING, May 24th.

The House of Delegates met in Benbow Hall at 10:30 a. m. Business being resumed, Dr. T. S. McMullan, for the Committee on President's Address, reported as follows:

The committee appointed to consider the President's Address, and report on its recommendations, submit:

We congratulate the President of the Society upon the timely suggestions with which his address is replete, and especially do we bear testimony to the practical and succinct and clear statements with which it abounds.

Touching the question of the establishment of general hospitals and sanitaria, while we heartily agree with the conclusions reached, and recommend on the part of all a careful study of the suggestions contained, we are frank to say that this matter, being primarily of local import, can be best worked out in each individual community by those most nearly concerned.

We think that a general recommendation should be given by our Society to the Governing Board of each county in the State as to the expediency of establishing isolating hospitals; especially do we think this necessary at this time, in view of the present prevalence in North Carolina of a communicable disease of such a nature as to not only now entail great, and, we may say in many instances, unnecessary expense, but which, if not checked by proper isolating measures, will produce still further financial depletion and physical distress.

We ask the thoughtful consideration of all our members to the suggestions of this address, and a cultivation by them of the interest now being generally manifested on the part of the public toward the more general establishment of these beneficent institutions; and as an aid to individual effort and to further promote general interest we recommend a general distribution of the President's address by this Society at its expense.

Finally, we heartily concur in and commend the utterances contained relative to the efficient work of the officers of the Medical Society of the State of North Carolina. We feel that the profession of medicine in this State should be congratulated that they have as their highest exponent of thought and ethics, an organization which to-day presents itself a healthy, vigorous and harmonious body, and for whose future we see such hopeful sings.

(Signed) THOMAS E. ANDERSON.
ALBERT ANDERSON.
THOMAS S. MCMULLAN.

Adopted.

Dr. Way, for the Committee on Nominations, presented the following names for the various offices and committees of the Society:

President—Dr. Edward C. Register, Charlotte.
First Vice-President—Dr. L. B. McBrayer, Asheville.
Second Vice-President—Dr. W. H. H. Cobb, Jr., Goldsboro.

Third Vice-President—Dr. W. O. Spencer, Winston.

Orator—Dr. James M. Parrott, Kinston.

Essayist—Dr. Thomas S. McMullan, Hertford.

Leader of Debate—Dr. Samuel D. Booth, Oxford.

Members House of Delegates American Medical Association—Drs. J. Howell Way, Waynesville; James A. Burroughs, Asheville.

Committee on Public Policy and Legislation—Drs. R. H. Lewis, Raleigh; George G. Thomas, Wilmington; P. L. Murphy, Morganton; ex-officio, Edward C. Register, Charlotte; J. Howell Way, Waynesville.

Committee on Finance—Drs. D. A. Stanton, High Point; C. J. Sawyer, Windsor; S. P. J. Lee, Dunn.

Committee of Publication—Drs. J. Howell Way, Waynesville (ex-officio); George W. Pressly, Charlotte; H. McKee Tucker, Raleigh.

Committee of Scientific Work—Drs. R. H. Whitehead, Chapel Hill; O. C. Daniels, Oriental; J. Howell Way, Waynesville (ex-officio).

Committee on Obituaries—Drs. C. M. Poole, Craven; H. H. Harris, Wake Forest; Kemp P. Battle, Jr., Raleigh.

Delegates to Virginia Medical Society—Dr. Samuel D. Booth, Oxford; Cyrus Thompson, Jacksonville; J. B. Knight, Williamston; J. E. Grimsley, Greensboro; R. A. Whittaker, Kinston; J. A. Burroughs, Asheville.

Delegates to South Carolina Medical Society—Drs. J. R. Gordon, Jamestown; D. J. Hill, Lexington; Ben S. Herring, Wilson; W. R. Kirk, Hendersonville; D. A. Garrison, Bessemer City.

Delegates to Mississippi Valley Medical Association—Drs. R. E. Mason, Charlotte; J. A. Stevens, Clinton; S. M. Mann, Moyock; J. A. Turner, High Point; W. P. Horton, North Wilkesboro; H. H. Dodson, Greensboro.

Members State Board of Health—Drs. George G. Thomas, Wilmington; Thomas E. Anderson, Statesville.

Moved and seconded that the report be received and the Secretary be authorized to cast the ballot of the Society for the officers and committees as presented by the committee. Carried.

The Secretary cast the ballot as ordered.

Dr. Murphy asked for a ruling of the Chair of the House on the question as to the amount the County Societies should pay the Treasurer of the State Society for each of its members.

The President ruled that $2.00 annually was the proper amount. Agreed to without objection.

Dr. J. M. Baker offered the following amendement to the

Constitution, which was, after some little discussion, ordered to lie on the table.

When amended Arts. V and VIII will read as follows:

Art. V. The House of Delegates shall be the legislative and business body of the Society, and shall consist (1) of delegates elected by the component County Societies (2) *ex-officio*, the officers of the Society as defined in this Constitution, "provided that any member of the Society shall have the privilege of participating in all the deliberations of the session of the House.

Art. VIII. As at present with the following clause stricken out, "but no delegate shall be eligible to any office named in the preceding section, except Councillor."

(Later Dr. Baker withdrew the resolution, and requested it be not referred to the County Societies, which was agreed to.)

Dr. T. S. McMullan, for the Special Committee on Insurance Examinations, presented the following:

Resolved, That the House of Delegates of the Medical Society of the State of North Carolina do hereby adopt and recommend to the General Meeting of the State Society the adoption of the following preambles and resolutions:

WHEREAS, The fee of $5.00 for each examination of an applicant for life insurance (including a chemical analysis of urine, or even when no urinalysis is required) whatever amount of insurance is applied for, and an additional fee of $5.00 for each miscroscopic examination, is in the opinion of the Society both just and reasonable; and,

WHEREAS, A number of old line life insurance companies have recently sent to the members of this Society in many parts of the State a schedule of fees for life insurance examinations much below those stated above, and have declared that after a certain specified date they will not pay to their examiners fees larger than those prescribed by themselves; therefore,

Resolved, That the Medical Society of the State of North Carolina denies the right of life insurance companies to fix the fees which medical men shall charge for their services, and does hereby urgently recommend that each of its component County Medical Societies shall maintain the schedule of fees indicated in the first preamble above, for the reasons stated therein, and shall reserve to itself the right to fix fees for all services rendered by its members to any and all persons or corporations.

Resolved, That we do not deem it ethical to accept any compensa-

tion from any life insurance solicitors for life insurance examinations supplementary to the fees charged the company.

Resolved, That in the opinion of this Society it is incompatible with the principles of medical ethics adopted by it for members of one County Medical Society to go into other counties and examine applicants for insurance at a lower rate than the fees fixed for said services by the Medical Society of the county or counties to which said members shall go.

Resolved, That the Secretary of the State Medical Society be instructed to send to the Secretary of each County Medical Society a copy of these preambles and resolutions, and shall urgently suggest prompt action on the part of each County Society.

(Signed) THOMAS S. McMULLAN,
A. W. KNOX,
JAMES A. BURROUGHS,
Special Committee on Insurance Examinations.

On motion, the report of the committee was unanimously adopted, and the Secretary instructed to report the action of the House of Delegates to the General Meeting without delay and request similar action on the part of the General Meeting. (The Secretary did so, and the General Meeting, after a full and free discussion (pages 50 to 57), approved unanimously.

Dr. Whittaker suggested that he had heard some expressions of disapproval from some excellent and worthy members of the Society of the too frequent and conspicuous presence of non-members of the Society, and asked for information as to how gentlemen outside the Society and residing in other States were in attendance?

Dr. Baker called his attention to the fact that the Constitution provided for "Guests" by invitation of the Society or the Council.

Dr. Way called attention to the following preamble and resolution recently adopted by the State Board of Medical Examiners, and moved the adoption of the same by the House of Delegates:

WHEREAS, It is the observation of the members of the Board of Medical Examiners that young men who have not had sufficient academical training and education, before entering upon the study of medicine, are as a rule not well prepared and stand poor examinations for license to practice medicine.

Resolved, That the Board of Medical Examiners do earnestly urge, that the members of the North Carolina Medical Society and the medical rofession of the State shall use their influence, to the end that young men who have not had proper preliminary education shall not enter upon the study of medicine.

Motion seconded and carried without dissent.

Dr. R. H. Whitehead moved that the further sittings of the House of Delegates at this session be limited to from 9 a. m. to 10 a. m. Seconded by Dr. T. E. Anderson. Carried.

A recess was then ordered until 9 a. m. Thursday.

THURSDAY MORNING, May 25th.

The House of Delegates met in Benbow Hall as per recess of day previous.

Dr. Way, for the Committee on Nominations, reported Charlotte as the choice of the committee for place of next meeting, and moved the adoption of the report. Motion seconded.

Dr. Whittaker moved to substitute Morehead City. Substitute seconded.

Vote being taken, Dr. Whittaker's substitute was declared lost.

Vote being had on the committee's nomination of Charlotte as the place of meeting in 1906, it was adopted.

Dr. R. L. Gibbon was named as the State Society Member of the Local Committee of Arrangements for the session of 1906.

Dr. Hill presented the following resolution and moved its adoption:

Resolved, That after the year 1906 the date of the regular meetings of the Medical Society of the State of North Carolina be changed to a date in the late fall or early winter.

On motion of Dr. Way, seconded by several, the resolution was laid on the table indefinitely.

Dr. Thomas E. Anderson presented the following report of the Finance Committee:

We, your Committee on Finance, desire to submit the following report, after a careful review of the books of the Treasurer:

Balance of moneys on hand after last meeting, May 27, 1904	$2,110.32
Collections during year 1905	2,020.00
Which, being added to balance on hand, amounts to	4,130.32

We find the disbursements for all purposes, the items of which we have carefully gone over, amounts to $1,687.71. This deducted from receipts leaves a balance in the hands of the Treasurer of $2,442.61.

In submitting above report we take pleasure in bearing testimony to the systematic and efficient manner in which the interests of the Society has been conserved by the Secretary and Treasurer of the body.

We recommend that the salaries of said officials remain as last year, $300 for Secretary and $150 for Treasurer.

Respectfully, your committee, THOMAS E. ANDERSON,
JAMES A. BURROUGHS.

On motion, the report of the committee was adopted.

Motion being made, the Chair designated Drs. S. D. Booth and R. A. Whittaker a committee to escort and introduce the President-elect, Dr. Edward C. Register, to the General Meeting.

The Secretary then announced the following appointments of Chairmen of Sections for the 1906 meeting in Charlotte, and urged the gentlemen receiving the appointments to use every effort possible to have a good selection of well-written papers for the 1906 programme:

Dr. Lawrence E. Holmes, Asheville, Anatomy and Surgery.
Dr. J. Clegg Hall, Boardman, Materia Medica and Therapeutics.
Dr. E. C. Boyette, Mt. Holly, Practice of Medicine.
Dr. S. A. Stevens, Monroe Physiology and Chemistry.
Dr. Cyrus Thompson, Jacksonville, Obstetrics.
Dr. C. W. Mosley, North Wilkesboro, Gynæcology.
Dr. W. F. Hargrove, Kinston, Medical Jurisprudence and State Med.
Dr. Thos. R. Little, Greensboro, Pathology and Microscopy.
Dr. Robt. L. Gibbon Charlotte, Railway Surgery.
Dr. E. H. Brooks, Reidsville, Pædiatrics.

There being no further business, the House of Delegates adjourned *sine die*.

DAVID E. TAYLOE, *President.*

J. HOWELL WAY, *Secretary.*

FORTY-THIRD ANNUAL MEETING

OF THE

BOARD OF MEDICAL EXAMINERS

OF THE

STATE OF NORTH CAROLINA.

The Board met in Greensboro, N. C., on Wednesday, May 17, 1905, at 8 p. m.

The registration book showed the attendance of 133 applicants, representing 39 different medical colleges.

The following order of examinations was held, viz.: Thursday, 9 a. m., Dr. Laughinghouse on Physiology; at 3 p. m., Dr. Battle on Materia Medica and Therapeutics; at 8 p. m., Dr. Pressly on Chemistry; Friday morning at 9 o'clock, Dr. Fletcher on Obstetrics; at 3 p. m., Dr. Russell on Surgery; on Saturday at 9 a. m., Dr. Parrott on Anatomy; at 3 p. m., Dr. Kent on Practice. The examination on Obstetrics was supplemented by practical work on the manakin, and in Anatomy by practical work with the microscope. After a careful examination of all the papers extending over five days it was found that 92 had made the required 80 per cent, 40 failed, and one withdrew.

The following were granted license, viz.:

J. Peebles Proctor, Williamston.
Henry J. Garrigues, Tryon.
Baird U. Brooks, Nashville.
Baxter S. Moore, Charlotte.
Brodie C. Nalle, Charlotte.
Baxter M. Haynes, Cliffside.
Joseph W. Halford, Chalybeate Springs.
Joseph F. Blake, Chadbourn.
Isaac J. Archer, Black Mountain.
Lorenzo S. Webb, Windsor.
John B. Cranmer, Chapel Hill.
Joseph W. Summers, Davidson.

Owen Smith, Asheville.
Herbert E. Rowe, Newton.
John C. Dye, Fayetteville.
Bertie O. Edwards, Samel Springs.
Cyrus J. McCombs, Mint Hill.
William C. Mebane, Mount Airy.
John S. Harrison, Elm City.
Henry B. Perry, Sweet Water.
Harley G. Brookshire, Emma.
James L. Wyatt, Wadesboro.
Alpheus W. Disosway, New Bern.
Milton R. Gibson, Gibson.
Edward McQ. Salley, Tryon.
Philip W. Flagge, Greensboro.
Edward V. Harbeck, Gem.
Harry A. Eberle, Greensboro.
William P. Reaves, Greensboro.
Wilbur A. McPhaul, Ashpole.
James M. Wells, Shelby.
James F. Carraway, Asheville.
Emmette E. Walker, Snow Hill.
Laurie J. Arnold, Sanford.
William C. Bostic, Forest City.
J. Floyd Martin, Yadkinville.
Ralph S. Stevens, Smithfield.
Quinton H. Cooke, Aulander.
Thos. G. Basnight, Stokes.
William D. Witherbee, Charlotte.
Ashley M. Benton, Evergreen.
Carl W. Sutton, LaGrange.
Joseph H. Norman, Brinkleyville.
Joseph N. Moore, Wilson.
Mont R. Farrar, Greensboro.
Edward L. Thomas (col.), Charlotte.
Andrew J. Christian (col.), Winston-Salem.
Lewyn E. McCauley (col.), Raleigh.
John E. Baxter (col.), Rocky Mount.
John L. Carroll, Asheville.
Jere E. Cocke, Asheville.
John Donelly, Charlotte.
Leone B. Newell, Newall.
Isaac E. Burnett, White Rock.
Jefferson F. Landen, Chinquapin.
Chas. W. Woodson, Salisbury.
James J. Philips, Tarboro.

Ivan P. Battle, Rocky Mount.
Julius J. Caldwell, Jr., Salisbury.
Joel Whitaker, Raleigh.
William A. Brumfield, Renan, Va.
John B. Williams, Jr., Oxford.
W. Talmage Long, Roxboro.
Geo. S. Hill, Marblehead, Mass.
William Moncure, Raleigh.
Squire F. Tillotson, King.
Cassius H. Morgan, Higgins.
Fielding L. Ashton, Richmond, Va.
Delos D. Hooper, Tuckaseigee.
Eustace H. Sloop, Mooresville.
Geo. M. Cooper, Clinton.
William D. Deshazo, Spencer, Va.
John S. Gibson, Gibson.
Archibald W. Graham, Charlotte.
Frisby T. McKaig, Robbinsville.
DeLacy Faust, Liberty.
Arthur B. Croom, Maxton.
Oswald O. Kafer, New Bern.
James A. Stone, Shallotte.
Edgar C. Person, Pikeville.
Kemp P. B. Bonner, Aurora.
Joseph H. Saunders, Washington.
Alice E. Johnson, Southern Pines.
Robert S. Carroll, Asheville.
Richard C. Jacox (col.), Franklin, Va.
Joseph Akerman, Wilmington.
James A. Duguid, New Bern.
Chas. M. Clodfetter, Lexington.
Henry H. Harrison, Enfield.
Arthur T. Pritchard, Asheville.
Livingston F. Johnson, Wallace.
Samuel L. Stringfield, Waynesville.

The first honor was won by Dr. Leone B. Newell, of Newell, with a general average of 95 and 6-7. The second honor was won by Dr. James J. Phillips, of Tarboro, with a general average of 94 and 4-7. The third place was taken by Dr. Eustace H. Sloop, of Mooresville, with a grade of 93 and 3-7.

Dr. Henry J. Garrigues, of Tryon, N. C., lately of New York City, came before the Board, and on account of his distinguished services in the profession, his reputation as an

eminent medical author and teacher, license was issued to him on an oral examination, and he was cordially welcomed among us.

The following were the questions used in the examinations:

Physiology and Hygiene.

CHAS. O'H. LAUGHINGHOUSE, M.D., GREENVILLE.

1. What action has pancreatic Juice upon Nitrogenized substances?
2. How is inspired oxygen absorbed into the system?
3. What conditions modify Temperature in the Body?
4. Name the Vascular or Ductless Glands.
5. Give origin and functions of Bile.
6. Give functions of Liver.
7. Give functions of Cerebellum.
8. Give functions of Anterior Roots of Spinal Cord.
9. What nerve endows the tongue with motion?
10. Differentiate between an Antiseptic and a Disinfectant.

Materia Medica and Therapeutics.

J. T. J. BATTLE, M.D., GREENSBORO.

1. Give dose and physiological action of *Ipecacuanha*, mention alkaloids.
2. Dose and physiological action of *Chloral Hydrate*.
3. Give preparations of *Nux Vomica*, doses, its principal alkaloid, symptoms of lethal dose.
4. Give technical name of *Jamestown weed*, its alkaloids, symptoms and treatment of poisoning by.
5. *Cocaine*, dose, toxic symptoms and treatment.
6. *Gelsemium*, dose of Tr. and F. E., its Alkaloid and dose, symptoms and treatment of poisoning by.
7. Physiological action of *Cannabis Indica*.
8. Explain effect of *Acetanilid* and the cyanosis it sometimes produces, dose.
9. Give dose and therapeutic uses of *Sparteine*.
10. If any reason why these combinations should not be used, give them:

1. Pulv. Ipec., Acid. Tannic., Plumbi Acet.
2. Antepyrin, Spts. Aether Nitrosi.
3. Tr. Ferri., Tr. Nuc. Vom., Tr. Cinch. Co.
4. Cocaine Hyd., Sodii Borat., Aq. Rosœ.
5. Potassii Permang., Hydrogen Perox., Aq. Destil.
6. Spts. Turpentine, Tr. Iodine, Lin. Chlorof.

Chemistry.

GEO. W. PRESSLY, M.D., CHARLOTTE.

1. What are hydrates?
2. Distinguish between deliquescent and efflorescent substances.
3. What is alcoholic fermentation?
4. Give name and formula of three acids used in medicine.
5. Write a chemical equation.
6. Chemical anidote for Nitrate of Silver.
7. What is contained in the so-called hard waters?
8. Name the inorganic salts of the blood.
9. Normal temperature of the body in Centigrade Scale.
10. Convert 1 c. c. of water to minims.
11. What is Iodoform chemically?
12. Complete the following:

$$K_2CO_3 + H_2O + CO_2 =$$
$$CaCl_2 + Na_2CO_3 =$$
$$2C_2H_5OH + HNO_3 =$$

Answer any ten questions and ONLY ten.

Obstetrics, Gynecology and Pediatrics.

DR. M. H. FLETCHER, ASHEVILLE.

1. The True Pelvis—Describe the superior strait, the Inferior strait, giving boundaries of each.

2. Describe preparation for delivery after labor has actually begun, the necessary articles to be gotten together, preparation of patient, physician, patient's bed, etc.

3. Give treatment of delay in the first stage of labor. Treatment for antepartum eclampsia at 6th or 7th month.

4. Give differential diagnosis between pregnancy at the 3rd month and an interstitial fibroid of the uterus.

5. Give Etiology and symptoms of Pelvic Cellulitis.

6. Give symptoms and treatment of Endometritis.

7. Give directions for care of new-born baby for the first twelve hours after birth.

8. Give symptoms and treatment of Acute Catarrhal Bronchitis in a child two years old.

9. Give etiology, lesions, prophylaxis and treatment of Acute Gastro-enteric Infection. (Summer Diarrhœa in children).

Answer any eight questions and only eight.

Surgery.

BY F. H. RUSSELL, M.D., WILMINGTON.

Give Etiology of Erysipelas, Carbuncle, Septicæmia.

2. Give general plan of treatment in cases of inflammation and suppuration.

3. Give the general and local treatment of hemorrhage.
4. Give in detail the preparation of a patient for laparotomy.
5. Give treatment of acute suppurative Osteomyelitis.
6. Give treatment of compound fracture of lower one-third of Femur.
7. Describe circular method of amputation through upper one-third of leg.
8. Give causes and symptoms of Compression of Brain.
9. Diagnosis of penetrating wounds of abdomen.

Anatomy and Histology.

JAMES M. PARROTT, M.D., KINSTON.

1. Describe the upper extremity of the Humerus.
2. Describe the Middle Meningeal Artery (Meningea Magna) after it emerges from the foramen spinosum, giving its distribution; state at what point you would trephine to stop hemorrhage from the vessel.
3. Describe the Island of Riel (or Insula) or Central Lobe.
4. Describe and give the relations of the Tonsils.
5. Describe and give relations of the Internal Mammary Artery.
6. Give the relations of the left kidney.
7. What are the boundaries of the Femoral Canal and give the relations which it bears to the Deep Epigastric and Obturator Arteries and the Spermatic Cord.
8. Give Attachments of the Ligaments of the Hip Joint.
9. Give the origin and distribution of the (4th) Fourth Pair of Cranial Nerves (Pathetic Nerve).
10. Give the distribution of the Musclo-Spiral Nerve and name its branches.

N. B.—Answer only (8) eight questions.

Practice of Medicine.

BY A. A. KENT, M.D., LENOIR.

1. Give etiology of Lobar Pneumonia.
2. Give the symptoms of Hæmorrhage in Typhoid Fever.
3. Define Loco-Motor Ataxia and give the anatomical lesion.
4. Give treatment for Sciatica.
5. Where is the point of tenderness in Appendicitis, in Hepatic Colic (Cholocystalgia), in Nephritic Colic (Nephralgia) of right side?
6. Give treatment for Gonnorrheal Arthritis.
7. Give treatment for Aortic Stenosis.
8. Give symptoms of Tubercular Kidney.
9. Write a single prescription for Erysipelas.
10. Outline briefly the treatment of Glycosuria.

TABULATED LIST BY NUMBER.

Number.	Grade.	School.	College of Graduation.	Year of Graduation.
1	93¼	R	University College of Medicine, Richmond	1903
2	Withdrew	R	North Carolina Medical College	1903
3	80	R	University of Copenhagen, Denmark	1869
4	82⅜	R	University of Maryland	1905
5	80½	R	University of Virginia	1902
6	90¼	R	University of Virginia	1903
7	84½	R	North Carolina Medical College	1905
8	65¼	R	Vanderbilt University	1893
9	65¼	R	Atlanta Medical College	1898
10	89⅝	R	Columbian University	1904
11	83⅜	R	North Carolina Medical College	1905
12	80	R	Northwestern University	1896
13	85⅜	R	University of North Carolina	1905
14	90¼	R	University of North Carolina	1905
15	86½	R	North Carolina Medical College	1905
16	84⅝	R	Jefferson	1904
17	89⅜	R	North Carolina Medical College	1905
18	72⅝	R	University of Tennessee, Nashville	1902
19	85⅜	R	North Carolina Medical College	1905
20	88⅜	R	North Carolina Medical College	1905
21	87⅜	R	North Carolina Medical College	1905
22	75⅜	R	University of Maryland	1905
23	92⅛	R	North Carolina Medical College	1905
24	67¾	R	North Carolina Medical College	1905
25	80	R	Medical College of Virginia	1903
26	92¼	R	North Carolina Medical College	1905
27	72½	R	North Carolina Medical College	1902
28	88⅝	R	North Carolina Medical College	1905
29	87⅝	R	Medico-Chi. Philadelphia	1905
30	88½	R	University of Maryland	1905
31	80	R	University of Maryland	1905
32	82	R	University of Maryland	1905
33	87⅝	R	Washington University	1902
34	88⅜	R	North Carolina Medical College	1905
35	80	R	McGill University	1876
36	83¼	R	University of the South	1903
37	80½	R	University of Nashville	1904
38	74⅝	R	Chattanooga Medical College	1905
39	82⅜	R	North Carolina Medical College	1905
40	80	R	Medical College of the State of South Carolina	1900
41	84⅜	R	University College of Medicine, Richmond	1900
42	64¼	R	Atlanta College of P. and S.	1902
43	80	R	North Carolina Medical College	1905
44	80	R	North Carolina Medical College	1905
45	74¾	R	North Carolina Medical College	1905
46	63⅜	R	University of Maryland	1904
47	70⅜	R	North Carolina Medical College	1905
48	77	R	North Carolina Medical College	1903
49	80	R	North Carolina Medical College	1905

TABULATED LIST—CONTINUED.

Number.	Grade.	School.	College of Graduation.	Year of Graduation.
50	91 2/7	R	University of North Carolina	1905
51	80	R	University of North Carolina	1905
52	80	R	University of Maryland	1904
53	59 4/7	R	Maryland Medical College	1901
54	83 1/7	R	McGill University	1899
55	68	R	University of Tennessee	1904
56	81 2/7	R	North Carolina Medical College	1905
57	85 4/7	R	Tulane	1905
58	80	R	Tulane	1905
59	66 6/7	R	Grant University	1900
60	70 1/7	R	Chattanooga Medical College	1904
61	76 1/7	R	University of Maryland	1903
62	80	R	University of North Carolina	1905
63	80	R	University of North Carolina	1905
64	76 1/7	R	University of Maryland	1905
65	75 3/7	R	Kentucky University	1905
66	69 2/7	R	University of the South	1899
67	56 5/7	R	Hospital College of Medicine, Louisville	1898
68	63 4/7	R	Tennessee Medical College	1902
69	68 1/7	R	Knoxville Medical School	1904
70	68 1/7	R	Leonard Medical College	1902
71	84 4/7	R	Leonard Medical College	1905
72	70	R	Leonard Medical College	1905
73	60	R	Meharry Medical College	1904
74	80	R	Leonard Medical College	1904
75	67 1/7	R	Leonard Medical College	1905
76	80	R	Leonard Medical College	1905
77	86 1/7	R	Leonard Medical College	1905
78	75	R	Leonard Medical College	1905
79	74 3/7	R	Leonard Medical College	1905
80	70 1/7	R	Knoxville Medical College	1904
81	70 1/7	R	Leonard Medical College	1905
82	80	R	Louisville Medical College	1905
83	80	R	Louisville Medical College	1905
84	85 5/7	R	University of North Carolina	1905
85	95 6/7	R	University of North Carolina	1905
86	76 5/7	R	University of North Carolina	1905
87	81 3/7	R	Tennessee Medical College	1901
88	81 3/7	R	University College of Medicine, Richmond	1905
89	91 1/7	R	P. and S., New York City	1904
90	94 4/7	R	P. and S., New York City	1894
91	88 2/7	R	Jefferson	1904
92	90 6/7	R	Johns Hopkins	1904
93	80 5/7	R	University of Maryland	1900
94	87 6/7	R	University of Virginia	1897
95	80	R	Baltimore Medical College	1896
96	70	R	Medical College of Virginia	1905
97	71 1/7	R	University of Maryland	1904
98	80	R	Baltimore Medical College	1905

TABULATED LIST—Continued.

Number.	Grade.	School.	College of Graduation.	Year of Graduation.
99	89 4/7	R	Harvard	1899
100	87 3/7	R	University of Pennsylvania	1902
101	75	R	North Carolina Medical College	1905
102	84 1/7	R	North Carolina Medical College	1905
103	80	R	Tennessee Medical College	1901
104	85 2/7	R	University College of Medicine, Richmond	1905
105	86 2/7	R	University College of Medicine, Richmond	1905
106	93 3/7	R	North Carolina Medical College	1905
107	69 6/7	R	Medical College of Virginia	1905
108	89 5/7	R	University College of Medicine, Richmond	1905
109	89 1/2	R	University College of Medicine, Richmond	1905
110	86 1/7	R	University of Maryland	1905
111	87 6/7	R	University of Maryland	1905
112	82 3/7	R	University of Alabama	1890
113	80	R	North Carolina Medical College	1905
114	74 3/7	R	Atlanta College of P. and S.	1900
115	80	R	University of Maryland	1905
116	82	R	University of Maryland	1905
117	80	R	University of Maryland	1905
118	66 5/7	R	Kentucky University	1904
119	89 2/7	R	Medical College of Virginia	1905
120	85 1/7	R	Medical College of Virginia	1905
121	91 4/7	R	University College of Medicine, Richmond	1905
122	91 6/7	R	Woman's Medical College, Philadelphia	1905
123	92	R	Rush, Chicago	1897
124	45	R	Chattanooga Medical College	1903
125	80	R	Leonard Medical College	1902
126	81 5/7	R	Johns Hopkins	1900
127	80	R	North Carolina Medical College	1905
128	80	R	P. and S., Baltimore	1905
129	71	R	P. and S., Baltimore	1905
130	92 5/7	R	Jefferson Medical College, Philadelphia	1905
131	89	R	Jefferson Medical College, Philadelphia	1905
132	86 2/7	R	Jefferson Medical College, Philadelphia	1905
133	89 1/7	R	Jefferson Medical College, Philadelphia	1905

TABULATED LIST OF COLLEGES.

College of Graduation.	Passed.	Rejected.	Total.
North Carolina Medical College	20	*7	27
University of Maryland	11	5	16
University College of Medicine, Richmond	8		8
Medical College of Virginia	3	2	5
University of Virginia	3		3
Chattanooga Medical College		3	3
Tennessee Medical College	2	1	3
University of Tennessee		2	2
Jefferson, Philadelphia	6		6
McGill University	2		2
University of the South	1	1	2
P. and S., Atlanta		2	2
Tulane	2		2
Kentucky University		2	2
University of North Carolina	8	1	9
Leonard Medical College	5	6	11
Knoxville Medical College		2	2
Louisville Medical College	2		2
P. and S., New York City	2		2
Johns Hopkins	2		2
Baltimore Medical College	2		2
Rush, Chicago	1		1
Woman's Medical College of Philadelphia	1		1
University of Alabama	1		1
University of Pennsylvania	1		1
Harvard	1		1
Meharry Medical College		1	1
Hospital College of Medicine, Louisville		1	1
Grant University		1	1
Maryland Medical College		1	1
Medical College of State of South Carolina	1		1
University of Nashville	1		1
Washington University	1		1
Medico-Chi, Philadelph a	1		1
Northwestern University	1		1
Columbian University	1		1
Atlanta Medical College		1	1
Vanderbilt University		1	1
University of Copenhagen, Denmark	1		1
P. and S., Baltimore	1	1	2
Totals	92	41	133

* One withdrew.

On Monday night the Board met in special session to consider the question of granting permits or license to those claiming to have been practicing in North Carolina prior to March 7, 1885. Dr. Way, as Secretary of the State Medical Society, and Dr. Lewis, as chairman of the Legislative Committee, were invited to sit with the Board during this session.

Dr. W. H. Cowell, of Currituck County; Dr. J. B. Ewing, of Yancey County; Dr. W. A. Peek, of Yancey County; Dr. J. M. Fairchilds, of Yancey County; Dr. A. J. McDevitt, of Madison County; Dr. J. A. Leming, of Madison County; Dr. H. L. Sullivan, of Forsyth County, presented affidavits that they were practicing medicine in North Carolina prior to March 7, 1885; also affidavits as to character. The cases were taken up by counties. The evidence showed that Dr. W. H. Cowell, of Currituck County, was not of age in 1885, so permit was refused.

Drs. Ewing, Peek and Fairchild, of Yancey County, were granted permits to register.

Dr. A. J. McDevitt, of Madison County, was granted permit. Dr. J. A. Leming was refused on account of non-residence in the State.

Dr. H. L. Sullivan, of Forsyth County, was promised a permit at the Hot Springs meeting, but for some reason the matter had been overlooked and it was ordered granted at this meeting.

Affidavits and letters were read in regard to one J. E. T. Welsh, of Swain County, who had been granted a special permit to register on affidavit of practicing regularly prior to March 7, 1885, in March of 1905. On motion, Drs. A. A. Kent and M. H. Fletcher were appointed a committee to act with Dr. J. Howell Way for the Society, and to investigate the charges against Dr. Welsh of fraudulently obtaining such permit, and if they were sustained to take such steps as are necessary to have the license revoked.

After a free discussion, the Board decided not to issue any more special permits to register, as twenty years was long enough to allow all those entitled to register on account of practice prior to March 7, 1885, to do so, and hereafter all

special medical license bills for the benefit of individuals introduced in the Legislature would be fought and not compromised by the issuing of a special permit. Dr. Lewis, as chairman of the Legislative Committee, signified his willingness to contest all such private legislation.

Dr. T. S. McMullan made a statement in regard to Dr. T. A. Cox, and read a letter from Dr. Riddicks, his attending physician, stating that Dr. Cox was sick in bed and could not attend the meeting of the Board, and asking that a temporary license already granted Dr. Cox be extended for a year. Request was granted.

Dr. Kent introduced the following resolution, which was passed unanimously. This resolution was reported to the House of Delegates of the State Society, who unanimously approved of the Board's action:

That the Board of Medical Examiners shall not in the future grant special permits for registration or license any one to practice medicine except upon regular examination, as prescribed by the laws of the State governing the practice of medicine.

On motion, it was decided to post the numbers of those passing the Board, as soon as it was determined, in some public place near the examination hall.

On motion, Dr. Fletcher was authorized to purchase a new manikin for the practical work in Obstetrics.

The following preamble and resolution was adopted and ordered communicated to the Society:

Whereas, it is the observation of the members of the Board of Medical Examiners that young men who have not had sufficient academical training and education, before entering upon the study of medicine are as a rule not well prepared and stand poor examinations for license to practice medicine.

***Resolved,* That the Board of Medical Examiners do earnestly urge that the members of the North Carolina Medical Society and the medical profession of the State shall use their influence to the end that young men who have not had proper preliminary education shall not enter upon the study of medicine.**

The Board adjourned to meet in Charlotte, Wednesday preceding the meeting of the State Society in 1906.

Dr. Chas. O'H. Laughinghouse,

Dr. Geo. W. Pressly, *Secretary.* *President.*

PROCEEDINGS OF THE ANNUAL CONJOINT SESSION

OF THE

Medical Society of the State of North Carolina

AND THE

NORTH CAROLINA STATE BOARD OF HEALTH,

Held on Wednesday, May 24, 1905,

AT GREENSBORO, N. C.

At 12 m. on Wednesday of the second days' session of the Medical Society, in conformity to the usual annual custom, a recess of the Society was, on motion, ordered for the purpose of holding a conjoint session with the State Board of Health.

The great majority of the members of the Society remained in attendance.

The conjoint session was called to order by Dr. S. Westray Battle, of the Board, who expressed the pleasure of the Board in seeing the session so well attended.

The annual report of the Secretary was called for, and presented by the Secretary, Dr. R. H. Lewis, as follows:

ANNUAL REPORT OF THE SECRETARY, R. H. LEWIS, M.D., RALEIGH, N. C., MAY 1, 1904, TO MAY 1, 1905.

During the past year the special work of your Secretary—in addition to the usual routine work of the office, which is always to the fore, and a statement of which in detail will be found in the Biennial report for 1903-1904, has consisted in promoting the crusade against tuberculosis, inaugurated in our last report. The suggestions therein made have been carried out as fully as our very limited facilities—half the time of one stenographer—have permitted. The plan pursued has been as follows:

First, the preparation of a pamphlet on the "Causes and Prevention of Consumption." The attempt was made to put the matter to the people as simply and clearly as possible and at the same time to make it as interesting as the narrow limits demanded by the necessary conciseness would permit. As a copy of this publication has been sent to you, it is superfluous to further dwell upon it.

The question of getting the pamphlet into the hands of the people was carefully considered, and it was decided that it would be much better to send it directly to the individual instead of depending upon the "take one" principle. In a population as large as ours a selection of the individuals had to be made, of course, and the following classes, which were regarded as the most influential in this work, were selected to be served first: Editors, Physicians, Ministers, Lawyers, Teachers and Manufacturers employing in-door labor.

Realizing that the literature that is not read is usually so much waste paper it was thought that if a short letter printed in typewriter type with the signature of the Secretary in script was enclosed with the pamphlet it might excite interest, to some extent at least. So a letter to each of the classes named above was specially composed to suit and earnestly appealing to them to read it and assist in spreading the information contained in the pamphlet, promising in every case to send free of charge as many copies as the reader would agree to distribute, was enclosed with each pamphlet. The editors of our State were exceedingly kind in noticing the article in their papers, and in consequence there have been calls for it from Indiana to Texas. Ministers and teachers have shown the most interest and have agreed to do more distributing than any of the others. While by far the most important of all in the solution of this great problem is our own profession, they have, I deeply regret to say, apparently felt no concern about it. I say apparently because they may, and in very many cases no doubt have, exerted themselves to instruct their tuberculous patients and the members of their households in the proper methods of prevention. For humanity's sake and for the honor of the profession, let us hope and believe so at any rate. It was hoped that there would be a large demand from them for the pamphlet for distribution among their tuberculous families, but that hope, much to my disappointment not to say mortification, has proven an irridescent dream so far. But we will not despair. We can not abandon the hope of securing the earnest and interested co-operation in this great work, which means more for suffering humanity than any other that can be mentioned, and which is receiving at this time so much attention and sympathetic aid from so many persons of all callings who love their fellow men all over this great country of ours and throughout the civilized world, from the one class who can do so much to advance it.

The County Medical Societies could be of much service in this campaign against tuberculosis. I hope they will devote at least one meeting every year to it, having some one read a paper and then holding a symposium on the subject. As we know, the curability of tuberculosis depends most of all upon an early diagnosis—before the degenerative changes have begun—and a thorough discus-

sion of this one aspect of the subject would doubtless eventuate in much good. The chief benefit to be derived, however, would consist in an increased interest in the subject and a keener appreciation of the grave responsibility of the physician in relation to it, whether he wishes to admit it or not. This might suggest to some the advisability of personally as well as professionally aiding in the various forms of effort—in helping towards the formation of anti-tuberculosis societies and by giving an occasional lecture, for example.

As this subject has been considered more or less fully in the tenth biennial report, the manuscript of which has been in the hands of the printer for months, I will not further tax your patience with it. Anybody desiring a copy of this report can get it by sending a request for it to the Secretary, as soon as it is printed.

Smallpox has continued to prevail throughout the State and more widely than ever before—the number of counties infected is 78, the number of cases is, white 3,636, colored 3,739—total 7,375; number of deaths, white 13 colored 18; total 31. Death rate, per cent for the whites 0.36 for the colored 0.48, for both races combined 0.42. The figures for the last smallpox year were, respectively, cases 2,840, 2,530, 5,370; death rate 1.23, 1.34, 1.28; for the year before that, 1902-3, 1861, 2,595, 4,456, with a death rate per cent of 3.12, 4.04, 3.66. From these figures it appears that the disease has been becoming more abundant and decidedly less fatal. As a consequence of this mildness the difficulty in controlling it has become greater than ever. Indeed it gives some color of reasonableness to the suggestion that has been made to abandon the attempt to control it at all, although, of course, that can not be seriously considered. There is no telling when it may become very much mort fatal. The following is a tabulated statement of the smallpox in the State for the past year. While it shows a larger number of cases than ever, I am sure that a great many cases have never been reported:

SMALLPOX REPORT, FROM MAY 1, 1904, TO MAY 1, 1905.

County.	Number of Cases.			Number of Deaths.		
	White.	Colored.	Total.	White.	Colored.	Total.
Alamance	23		23			
Alexander	45		45			
Anson	243	63	306			
Ashe	286	60	346	2	2	4
Beaufort	78	112	190	1	1	2
Bertie		1	1			
Bladen	30	70	100	1		1
Buncombe	31	7	38			
Brunswick	100	200	300	3	6	9
Burke	7		7			
Cabarrus	17	3	20			
Caldwell	4	13	17			
Camden	7	205	212			
Carteret	32	2	34			
Catawba	5		5			
Chatham	3	23	26			
Chowan	21	36	57			
Clay	8		8			
Cleveland	10	40	50			
Craven	2	43	45		2	2
Cumberland	8	6	14			
Currituck		10	10			
Davidson	2	3	5			
Davie	21	7	28	1		1
Duplin	1	53	54			
Durham	11	34	45			
Edgecombe	18	40	58			
Forsyth	35	15	50	1		1
Franklin	14	6	20			
Gaston	30	18	48			
Gates	40		40			
Granville	25		25			
Greene	75	225	300			
Guilford	21	62	83			
Harnett	28	36	64			
Haywood	38		38	1		1
Henderson	86	7	93			
Hertford	5	122	127			
Hyde		4	4			
Iredell		8	8			
Jackson	100		100			
Johnston	4	5	9			
Lenoir	57	51	108		1	1
Macon	2		2			
Madison	6		6			
Mecklenburg	27	7	34			
Mitchell	6		6			
Moore	24	4	28	1		1
Nash	17	63	80			
New Hanover	39	165	204			
Northampton	26	15	41			
Onslow	126		126	1		1
Orange	1		1			
Pamlico	191		191			
Pasquotank	5	18	23			
Pender	5	8	13			
Perquimans		32	32			
Person	25	7	32			
Pitt	100	50	150		1	1
Randolph	35		35			
Richmond	25	40	65			
Robeson	40	30	70			
Rockingham	12	8	20			
Rowan	4	1	5			
Rutherford	1	9	10			
Sampson	12	90	102			

SMALL-POX REPORT.—CONTINUED.

County.	Number of Cases.			Number of Deaths.		
	White.	Colored.	Total.	White.	Colored.	Total.
Scotland	1,000	1,350	2,350		2	2
Stanly	10	1	11		3	3
Swain	9		9			
Transylvania	39		39			
Wake	177	47	224			
Washington		2	2			
Warren		4	4			
Wayne	30	100	130			
Wilkes	34	96	130			
Wilson	11	2	13			
Yancey	260		26		1	1
Total in 78 counties	3,636	3,739	7,375	13	18	31
Death rate per cent				0.36	0.48	0.42

The Laboratory has continued to be of much assistance in our sanitary work—more than for any preceding year; at the same time it must be confessed that our physicians do not use it as they ought. The report of the Biologist is appended.

In the way of sanitary legislation we have secured the passage by the last Legislature of an Act to Establish a State Laboratory of Hygiene, but failed to get an appropriation large enough to justify cutting loose from the Agricultural Department. The ice, however, has been broken, and we hope to get sufficient money at the next session of the General Assembly to put us on an independent basis. We can then offer still greater facilities to the profession, although it must be confessed that they do not take advantage of what we have been offering, as we believe they should.

In conclusion, I wish to bespeak the cordial cooperation and assistance of our brethren of the profession in the work. While we may accomplish something without this, their aid and help would be simply invaluable.

REPORT OF THE BIOLOGIST.

GENTLEMEN OF THE BOARD OF HEALTH:—During the twelve months from May 1, 1904, to May 1, 1905, the total number of samples examined in the Biological Laboratory was 716. These include the following kinds, to-wit:

Official water samples	362
Physicians water samples	118
Sputum samples	98
Diphtheria exudates	76
Faeces for Hook-worm examination	46
Blood for malarial examination	16

Blood for Widal test, 2, (declined).

Our main work, and that upon which our income depends, has been the systematic analyses of samples from public water companies. This line of work has now been systematized in the laboratory and standards of quality for each separate supply established, based upon the average of a large number of successive analyses. By this means the biologist is now able, from a brief preliminary examination of each sample made as soon as possible after sample comes in, to determine whether or not the sample is up to the standard. If much below a notice is at once sent to the water company, and they are advised to see what is wrong. By this method we were able during the last year to inform three separate companies of infection of their supplies, and so enabled them to head off a possible epidemic. In another case the preliminary examination showed gross pollution, although the standard for that particular supply was very high. A telegram was at once sent to the mayor of the town, advising that the water be boiled until cause of trouble could be remedied. A few days later we got a letter from the superintendent of the waterworks, informing us that the negro who had been sent to fill the water bottle from a faucet used to fill a watering trough for horses, had confessed that he had merely sunk the bottle into the dirty trough and filled it with the mixture of dirt and stale water therein. A second sample, taken by the superintendent himself, proved up to the standard. We are not able to allow for the vagaries of negro servants, and if they send us dirty samples like this we have nothing to do but report accordingly.

As a whole, the public water supplies of the State are very good,—far superior to the average of Northern cities, which use sand filtered water or water without filtering. The alum or gravity process of filtering is alone used in this State. The water as filtered is very clear and sparkling. It is as nearly free from suspended matter as it is possible to make any but distilled water. When we began making chemical analyses we found that about one-third of the compa-

nies were running free alum into the filtered water. The excess of alum served to give the water the clear, sparkling character which pleases the eye. Our reports stating when free alum was present were at first resented, but now the companies have improved their filters and probably made their foremen more careful as to use of alum, so that for some time back there has been no alum found in any public water supply coming to the laboratory.

During last fall we had complaints from three separate towns that the boiler inspectors of insurance companies were claiming the water of these towns used in the boilers was ruining the steel shells. We were able to say that there must be some truth in these claims, since all three of the towns had been among the worst offenders in regard to the excessive use of alum. They were told how to prevent the complaint, and since then these towns have shown no alum in the waters, and presumably the boiler companies have ceased to protest.

The regular routine in analyzing public water samples includes a complete chemical analysis every three months and a partial chemical and complete biological analysis every month. No extra charge is made to the water companies for the quarterly chemical analyses, though this adds very greatly to the burden of the work. We had to take up this line in the laboratory on account of the Department of Agriculture being unwilling to do it, and being in fact unable to do it systematically. The chief value of this line of work lies in its being systematically done.

Water samples sent by physicians and local superintendents of health are examined free of charge in the laboratory. This class of samples receive biological examination only, with two chemical tests for the known products or toxines, produced by putrefactive bacteria. About half the samples of this class received are good water. The rest are polluted in varying degrees. It requires a minimum of six days to complete a bacteriological test. Yet many physicians demand a report by return mail, and not getting it sometimes feel mightily aggrieved.

A few physicians and city superintendents have sent in water samples which they acknowledged seemed to be all right, but asked for an analysis as a special favor to gratify the curiosity of some patron. Such samples have been invariably declined. Nobody is entitled to special favors in this laboratory, and the biologist has all he can do, and more, to keep up with meritorious work.

Tuberculous sputum is next to water our most important or most in demand line of work. Just why physicians have so much difficulty in diagnosing this disease does not appear. The greater part of the sputum samples received do in fact contain *Bacillus tuberculosis*.

Many of the samples sent in for examination as to presence of the tuberculosis germ and found free from this, showed from other and

fairly reliable peculiarities that the trouble was in some cases putrid bronchitis and in others gangrene of lung. The biologist thinks it practicable in most cases to determine from a sample of sputum whether the trouble is tuberculosis, bronchitis or gangrene.

Every fall, within a week after the opening of public schools, requests for diphtheretic examinations begin to come in. During the month of September as many as six such samples came in each mail. The demand generally ceases about Christmas. During the last two years the type of diphtheria in North Carolina seems to have been very mild. A few physicians on this account challenged the correctness of our diagnosis, but so far as we know those who sent samples to other laboratories had our findings confirmed. When a good sample of exudate is received the determination of the presence or absence of the germ of diphtheria by the laboratory test is one of the easiest and most certain of our processes. The laboratory method cannot, however, distinguish between mild and virulent races of the germ.

The interest in the campaign against *Uncinaria Americana*, the hook-worm, seems to have largely subsided or else physicians are able to diagnose this disease by clinical indications alone. For some time past most of our samples in this line have come from Iredell county.

Our malarial samples are mostly from local or Raleigh physicians, with a few from Statesville. They showed, in the majority of cases submitted, to be free from the plasmodia.

Only two demands for the Widal test were received. These were declined. The Widal test is worse than worthless unless the culture of the typhoid bacillus used to agglutinate the blood is fresh and virulent. To ensure this the race of the germ used should have been obtained fresh from the spleen of a typhoid corpse not longer than four months before. Such a culture in the laboratory must be transferred from tube to tube every three or four days. This entails a vast amount of labor and consumes a great deal of expensive culture media. The demand for the work does not justify such expenditure at present.

Besides the above named samples there has been a small demand for analyses of milk. This work, however, properly belongs to the Department of Agriculture, and will not be further referred to here.

The biologist has for many years been especially interested in the subject of pure food. During the last twelve months he has published two papers upon this subject. A third is in the hands of the Secretary of the Board awaiting publication. The State Board of Agriculture, at its meeting last December, appointed a committee consisting of the Commissioner of Agriculture, the Secretary of the Board of Health and the undersigned to draft a more stringent food law, or such an amendment to the former food law. An amendment

of this kind was prepared by the biologist, and after being approved by the Commissioner and the Secretary was introduced and passed by the legislature. The act has, however, so far remained a dead letter. It is referred to here in the hope that the Board of Health will pass a resolution asking the Agricultural Department, to which the execution of the law is entrusted, to vigorously prosecute violators as the amended law requires. The biologist is convinced, from knowledge of the physiological action of most of the more commonly used food preservatives, that much or all of the so-called appendicitis now so prevalent and fatal is caused by these poisonous drugs. The extent to which these preservatives are used upon perishable foods, more especially fresh meats and fish, is simply appalling. Probably 95 per cent. of all the butchers in the State use such preservatives. All of the sausage, both that made by local butchers and that sent from Chicago, is fairly loaded with sulphite of soda—one of the worst destroyers of membranous surfaces known to science.

It is known to the Board that our laboratory has hitherto depended for its support entirely upon the analytical fees received from public water companies. Yet these companies got their samples analyzed for half the regular rates of commercial laboratories. In addition to this work more than half of all our samples were examined free of charge. The last legislature was asked for an annual appropriation of $2,000. We actually received only $600 per annum for the next two years. The former law giving the laboratory a five-dollar fee for each sample sent by the water companies was changed, so that each company is required to pay to the Board of Health an annual tax of $60, and receives free analyses. As most of the smaller water companies are operating at a loss, and have not paid us for analyses made under the former law, they will probably plead insolvency, and refuse to pay the tax. Just how much the new law will net the laboratory cannot be told at present. There will be an average of 35 samples each month. Of these we can reasonably count upon not more than 30 paying the tax. This for twelve months from April 1, 1905, will yield us about $1,800. The estimated expenses for maintaining the laboratory for same period upon substantially the same basis as for the last year is $1,700. The laboratory can, in addition, draw upon the State appropriation to the extent of $600. But for reasons which will be presently given the biologist advises that this appropriation be not used during the present year, but for the laboratory to depend upon its earnings.

The work of the laboratory is now far beyond the reasonable industry of one man. More especially during the hot months when physicians are most urgent in their demands. The biologist thinks that with a student assistant for four or five months he can, however, manage the work since he did it last year alone. The biologist has several applications for such a place from members of the class

in chemistry in the A. & M. College. Such an assistant should be able to take all of the chemical work in water analysis and assist in cleaning and sterilizing glassware and other time-consuming routine work of the laboratory. The biologist being freed from this class of work will have time to look after the strictly biological work, and even to increase the present line, as will be presently explained. The salary required to secure such assistance for four months is $200. This sum has been included in the estimate of expenses as above made.

Were funds available, for the best results the laboratory should have two men of high grade. One should be as at present an expert in biology with a working knowledge of analytical and general chemistry. The other should be fundamentally an analytical chemist and specially expert in pharmaceutical, physiological and organic chemistry. He should be a good microscopist and capable of assisting in general work. In addition to these men, the laboratory should have a stenographic clerk and a servant. A working force of this nature will cost at least $4,000 per annum. It was for this reason that we asked for $2,000 from the State, the other $2,000 to be obtained from fees. As we did not get the amount asked, nor a third part of it, we cannot reorganize the laboratory as we intended.

There is urgent need of a State inspection of drugs. The biologist believes that for the health of the community this line of work is now more urgent than any other proposed to be taken up by the Board of Health. When we can afford a permanent assistant, he should be capable of carrying on this line as above mentioned.

There is some demand for laboratory diagnosis of rabies. Such work is done by microscopical examination of the brain and spinal marrow of the supposed rabid canine. The biologist intends to take up this line if relieved from some of the present burden of chemical work. There is also some demand for examination of tumors and supposed cancerous tissues. Many physicians are under the impression that cancer is a bacterial disease and can be diagnosed by ordinary bacteriological determinations. The cause of cancer is unknown, but enough is known to assure us that the cause is not a germ, and that the disease is not infectious. Still some information can be given as to the probable nature of tumors, and this, too, will receive the attention of the biologist as soon as time can be afforded.

Most of the apparatus now used by the biologist belongs to the Department of Agriculture. It is pretty well worn out and will have to be replaced within a year or two. To replace it will cost some $600 or more. It is for this reason that the biologist advises that the State appropriation be saved. At present the Board of Health pays nothing for rooms, gas, water or light or heat. These items if paid for would cost at least $50 per month.

The biologist of the Board is also biologist of the Department of

Agriculture, and the above items of expense are credited to his Division of the Department. For certain reasons the biologist thinks it will be impossible to continue this arrangement longer than one year more, and that after June 1, 1906, the Board will have to provide its own quarters and take the entire time of its biologist. To fit up suitable quarters will cost some $600 more, and this with the new apparatus will absorb the whole of the present State appropriation. It is hoped that the next legislature will give the appropriation of $2,000, which is the least sum that the laboratory can exist upon and answer the multifarious demands made upon it.

For the past two years the Board was supposed to receive only half the time and work of the biologist, the Department of Agriculture getting the other half. It is an old and proven maxim that no man can serve two masters. It is true in the present case. Instead of only half time the Board has, in fact, received fully three-fourths of the time of the biologist, and its work has entailed all the danger, worry and responsibility. The biologist has had no vacation last year, and can take none this year. The demands for hygienic work are the most urgent at the season when vacations are ripe and most indicated.

The biologist has behind him sixteen years' experience in the North Carolina Department of Agriculture and Experiment Station. This experience counts for a great deal in practical work. It has enabled the biologist to give the Department full value for its money, and at the same time permit the Board of Health to secure the greater part of the output of work.

As before mentioned, the laboratory has hitherto been supported almost wholly by the money earned by the industry and skill of the biologist. The water companies got their analyses at half rates, the physicians got theirs for nothing. The laboratory is out of debt with some $600 in bank. This is the result of two years' work.

The biologist had previously spent two years in post-graduate work in two principal universities at a cost of over $4,000. He has organized the work of your laboratory from the ground. He has done so for a very inadequate salary for the reason that no larger salary could be paid until the work of the laboratory had gained public confidence and public support. This public recognition seems to have been obtained, though, as usual in this State, financial recognition has been less prompt.

The biologist now asks the Board of Health to increase his salary as biologist to the Board and chief of the laboratory to the sum of $100 per month, and that such increase date back to January 1st of the present year. The biologist applied to the Secretary of the Board for such increase last December. No salary has been paid him since.

The work demanded of the biologist is very heavy and dangerous.

It requires skill which is in demand in other lines and places. The biologist feels that in justice to himself and his family, he must for the future receive for his services a closer approximation to their value. He hopes the Board will look upon this matter in the same light, and provide a fair *quid pro quo*.

The following is the estimated cost of carrying on the work of the laboratory for the twelve months from May, 1905, to May 1, 1906.

Salary of biologist	$1,200
Salary of assistant, four months	200
New apparatus	150
Supplies and postage	150
Total	$1,700

All of which is respectfully submitted,

GERALD MCCARTHY, *Biologist.*

It was then moved that the report be adopted, and the motion carried.

THE PRESIDENT: We have some papers on the programme of the conjoint session. They are now in order. Dr. E. C. Levy, of Richmond, will favor us with a paper on "Relative Value of the Various Methods of Determining the Sanitary Qualities of a Water Supply."

(See index for paper.)

DISCUSSION.

DR. W. J. MARTIN: Mr. President, if you will pardon me, I would like to say a word about this very interesting paper, because I have myself been interested in it and paid some attention to it. There are two things that I want to say correlative of the paper; one is in regard to the way samples are sent for water analysis. The average person sending you in a sample for examination, will put it in an old jug, with an old stopper, or in an old bottle, and put absolutely no mark on it,—send it along and request that you tell them whether it is fit for drinking or not, and whether it can be condemned or not, and I have had physicians to send me in water just that way; I have had others to do it under the direction of the physicians, thinking that the chemist, like a magician, can

put his wand in the bottle and draw forth a conclusion in regard to the water. Now, chemistry can not bear that. The chemist, in order to make his report fairly, honestly and intelligently, must have before him all the facts of the case, and there are no facts more important to him, in forming his opinion of that water, than those facts which are gotten by a survey of the field of the source of the water. He must know the history of that water, as far as it can be known, and intelligently given. If not, it is not fair to expect him to give a proper diagnosis of the water condition by the expert. I wish you would burn that into your memories, into your consciousness, and into the memory and consciousness of your patients,—those whom you are concerned about. Whenever you send to a chemical laboratory a sample of water for examination, do you, as the scientific expert of your community, see to it that a minute history of that water goes along with it, and throw any light that can be thrown on the subject, and before you send it, write to the expert as to how to send it and how to collect the sample. I have heard people say, "If I am going to tell all about the water, I don't want you to tell me about it." You may think that is casting a slur upon the chemist's ability, but all of our abilities are limited, and with that knowledge we can give you much better service, and what you want is the service.

There is another question, Mr. President, that was not directly touched upon there, and in which I have been very much interested of late. This gives me a chance to say something about it. I suppose that a vast majority of the cases of contamination of water are sewage contamination. By sewage contamination we do not necessarily mean the sewage contamination of cities, but of local conditions. Our sewage is deposited somewhere around the neighborhood of the well or the spring, and gets into that well or spring, after a time. I have heard men say that their father or grandfather were raised off that water, and they don't believe me when I say that this well is not pure and wholesome. They failed to

remember that the ground, like a sponge, not only takes up water, but holds microbes. And the sewage is deposited there and works deeper and further year by year, until finally—it may be after decades—years have passed—the contamination does reach the well and disease results. Now, it becomes important that we should recognize that as soon as possible, and, while the presence of chlorine in the water does not necessarily mean that the water has been contaminated with sewage, with the knowledge before us of local conditions, and the normal chlorine contents of the water of that location, it will tell me a great deal. If I know the local chlorine content of water, and I find in another water that persistently and continuously, for a length of time, the chlorine is in excess of the normal in that location, it is a mighty strong indication to me, supplemented in connection with other parts of the examination, that that water has been contaminated by sewage. Now, there are cases on record in your own family, in which the ice-cream freezer has been dumped out near the well, and if, twenty-four hours after that you had examined that water, you would have found an increase of chlorine in the water. But where, day after day, and month after month, the chlorine content is higher than the normal for that locality, you may suspect trouble. That simply leads me to this: If we had a knowledge of the normal chlorine contents of waters of the different points of the State, it would put into the hand of even the physician a very powerful means of making a rapid examination of the water, with reference to a supposed contamination in his own neighborhood. Now I believe (you can probably tell me if I am mistaken) that for our country only two States have done that—Massachusetts and Connecticut have established well-defined chlorine curbs throughout the State. I believe it would pay if means were raised whereby well water, spring water, lake water, surface water—all kinds of water—could be sent in from every locality of the State to the laboratory, and an examination be made from time to time, throughout

different parts of the year, until finally we should establish a *chlorine map* that would give us, to a great extent, the waters' chlorine contents of the waters throughout the State, and then we would be able, with a very simple examination, one that you could make almost at any time—especially through a range of a week or a month—whether there was any probable contamination of that water. I think that it is a thing that the Medical Society could very well take up, which the Health Board could push,—this matter of obtaining a chlorine map of the State.

Dr. Jos. Graham, of Raleigh, was then requested to read his paper on "A Proper Milk Supply for the Cities and Towns of North Carolina," but he requested that he be allowed, as everybody was tired, to postpone his paper until after dinner, which was allowed.

Dr. Ivy then asked to be informed whether that meant that the conjoint session adjourn for another year, or for them to have the paper in the Medical Society. The President suggested that the Medical Society should take it up in the regular session immediately after dinner.

On motion, it was so ordered, if found agreeable to the President of the Society.

A very interesting talk was made on "Effects of Child Labor," by Dr. A. J. McKelway, of Charlotte. (See index.)

The Conjoint Session then adjourned *sine die.*

The State Board of Health held a short business session, at which the Secretary announced the appointment by Gov. R. B. Glenn of Drs. J. Howell Way and W. O. Spencer, and the election by the Society of Drs. Geo. G. Thomas and Thos. E. Anderson, members for the ensuing term of six years.

(On request of the President, the members of the Board of Health remained, and a short executive session of the Board was held.)

IN MEMORIAM.

ALBERT GALLATIN CARR.
RUFUS A. SHIMPOCK.
C. W. PHIPPS.
SAMUEL MORRILL.
ISAAC W. JONES.
STARKE S. DANIELS.
WILLIAM H. PRIOLEAU.
GEORGE WHITTAKER REED.
ALEXANDER CRAWFORD.
JOHN H. McBRAYER.
GEORGE MEBANE IVIE.
JOHN R. McLELLAND.

Necrology.

Dr. A. G. CARR.

Dr. Albert Gallatin Carr was born in the historic village of Chapel Hill on the 21st day of April, 1847. He was the son of the late John Wesley Carr, who for a great many years was a successful merchant of Chapel Hill, and whose business sagacity and sterling integrity won for him the admiration and esteem of all men. His mother was a Miss Bullock, of Granville County, who is now living in the ninetieth year of her age. Her Christian character and uncompromising devotion to right living contributed no little to the success won in after life by her sons. He has now but one living brother, General Julian S. Carr, one of our greatest philanthropists, a patriotic citizen, and an earnest advocate of all measures to promote the industrial and educational advancement of this State. He has three living sisters, Mrs. W. A. Guthrie, of Durham; Mrs. J. F. Heitman, of Old Trinity, and Mrs. Lizzie King, of Chapel Hill. In addition to these relatives he left a wife and three sons: Dr. John R. Carr, who graduated at Johns Hopkins Medical College, with the highest honors of his class in June, 1904, and who now holds the enviable position of interne in the hospital of this famous institution; Dr. E. P. Carr, who is in the employ of the Government Geological Survey, and Mr. W. F. Carr, who holds a responsible office in the Durham Hosiery Mills.

Dr. Carr spent his early life in Chapel Hill, was educated at the University, graduating with honor from this institution in the class of 1867. He was popular with the student body, and his intellectual endowments and cheerful temperament made him a favorite with the college faculty.

After leaving the University, having determined to study medicine, he entered the medical department of the University of Virginia, where for one year he prosecuted the study of his profession with marked zeal and ability. At this time the distinguished John Stege Davis was professor of anatomy, who, on account of his brilliant lectures, was called the Nestor of the medical school. There was also that learned and courteous Southern gentleman, Dr. Cabell, who lectured on surgery and physiology; both of whom have long since passed away.

Dr. Carr continued professional work in the Bellevue Medical College, New York. Before his graduation, through a competitive examination, he secured the position of interne in an infant hospital, where he spent twelve months, graduating with his class in 1872. His first practice was in Cary, N. C., where he spent two years, winning unusual success and popularity. About the year 1875 he

moved to Durham, then a small and unimportant village, along the line of the North Carolina Railroad. On December 28th, of the same year, he was happily married to Mrs. Anne Moore, a sister of Mrs. J. S. Carr, a highly cultured and refined woman, who "did what she could" to lighten his burdens and add to his happiness. The death of Dr. Carr has removed from Durham a striking personality. He had lived among these people for thirty years, and had prosecuted the laborious work of his profession with an intelligent activity and an uncompromising devotion. In point of service he was the oldest practitioner in this community. He was the recognized leader in his profession, and his wise counsel was often sought by his professional brethren. Viewed from every standpoint, he was one among the most successful general practitioners. He was an omnivorous reader of medical literature, and always kept abreast with the many changes and progress along medical lines. Every year he supplied himself with new books and new instruments and lost no time in making himself familiar with new doctrines and new methods. He possessed a most retentive memory, and what he once knew he knew always.

His readings were not confined to medical works, but he was conversant with general literature as well. His familiarity with Holy Scripture was well known, for he never allowed himself to retire at night, no matter how late the hour or how exhausted he may have felt, without reading a chapter in the Bible. He was in no sense a superficial reader, but read to learn, and this knowledge he applied to the practical affairs of life. He made his own premises and drew his conclusions, and in all things had the courage of his convictions, which he vigorously expressed when the occasion required it. He was a very positive man, and this trait of character was conspicuously exhibited in his dealings with other men, and most especially in the practice of medicine. He was an expert diagnostitian, and treated his patients with an originality which was most refreshing at this time when text-book dogma are so tenaciously adhered to.

He was a bold practitioner, and was often wont to "blaze his own way," and to apply measures in the treatment of disease which bristled with his own originality.

Dr. Carr was fond of his profession, and every few years was accustomed to spend a month or two in Northern post-graduate schools seeking new truths in the diagnosis and treatment of disease. He had a most charming personality, always cheerful and oftentimes humorous. His keen wit and amusing anecdotes afforded his friends many hours of intense amusement. His patients had for him a peculiar affection, and accorded him many liberties of speech which would have been severely censured had they been indulged in by others. He was a sincere man, and scorned deceit and hypocrisy.

It may be said of him that he always said what he meant, and meant what he said. He loved the truth to such an extent that he never toyed with falsehood, even in jest.

His patients had implicit confidence in his judgment, and never doubted the correctness of his conclusions. If he lost one it was generally thought that all was done that human skill could accomplish, for he spared neither his mind nor his body in heroic effort to prolong their lives. He was often known to spend nights and days by the bedside of a patient, wasteful of his own strength, hoping that at some critical period he might be able to tide over the crisis. In Dr. Carr was well illustrated the adage: "Mens sana in corpore sano." Until a few years before his death he was a magnificent specimen of physical and intellectual manhood. He seemed never to have wearied, and his cheery face was never clouded by nights of ceaseless watchings. In the sick chamber his presence was an inspiration, and his patients felt better that they had seen him.

In his business dealings he was a man of the strictest integrity, the personification of honesty, his word was his bond, he never evaded an obligation.

He was generous on all occasions, and gave liberally of his means to charitable purposes, and was ready at all times to help those in need or distress.

Towards his professional brethren he was ethical, courteous and was never known to take advantage of a fellow-practitioner.

He was a loyal and enthusiastic member of the State Medical Society, and rarely failed to attend its annual meetings. He was for several years its very efficient treasurer, and it is well known by strict observance of business principles the financial status of the Society was much improved during his term of office. He was one of the founders of the Durham Academy of Medicine, and was always an earnest advocate of any measures which contemplated the betterment of the local profession. He had been superintendent of health of the county, and through him many changes were made in the management of the county home which added to the comfort and welfare of the unfortunate inmates of this institution.

In the civic life of the county he was a patriotic supporter of every policy which had for its purpose the social and industrial improvement of her people.

For several months prior to his death, Dr. Carr had been in failing health. His usual cheerfulness had given way to periods of intense despondency, until on January 13, 1905, as the rays of the rising sun were illuminating the eastern skies, and the frosts of a winter's day were being melted, his soul left its earthly tenement, and was wafted to the great beyond. He spent a life of service, full of activity and perfumed with the flowers of kindness whose fragrance will long remain in the memory of those who knew him.

Dr. RUFUS A SHIMPOCH.

Dr. Rufus A. Shimpoch died at his home in Gold Hill, N. C., October 30, 1904, at the age of sixty-nine years.

He was born in Cabarrus County, and received his literary education at North Carolina College, obtaining the degree of A. M. from that institution. He took one course of medical lectures at the University of Pennsylvania, and graduated from Long Island Hospital College in the year 1859. After graduation he located at Milledgeville, where he did quite a large practice, but when the war between the States began in 1861 he at once entered the service of the Confederacy, and was assigned to hospital duties at Morganton. He was faithful to the cause for which he had enlisted until the close in 1865. In June following he located in Gold Hill, where he enjoyed a large practice for more than thirty-nine years. In November, 1865, he was married to Miss Ellen McAlister, of Milledgeville, who, together with one daughter, survives him. For sometime prior to his death he was a great sufferer, being afflicted with a complication of diseases. The remote cause of his death, however, was that hopeless malady, Bright's disease. A short while before his death he developed a severe attack of pleurisy, and having been reduced to that degree physically where he had no power of resistance, fell an early victim and succumbed to this disease in a few days. He was buried at Saint Stevens Lutheran Church, of which he had been a member and an officer for many years. Dr. Shimpoch was a big-hearted man, and the community has lost one of its most respected and best-beloved citizens. He always regarded it a duty to take an active part in local affairs governing the town in which he lived. He was a substantial member of the Rowan County Medical Society, and for a number of years served as treasurer of that body.

Dr. C. W. PHIPPS.

Dr. C. W. Phipps, of Boone, Watauga County, died of pneumonia, in Raleigh, February 9, 1905.

Dr. Phipps was at the time of his death a member of the State Legislature, having been elected as the representative from Watauga County. He was in his own and surrounding counties well known, and was esteemed a conscientious physician. He was forty-four years old, and had practiced medicine for twenty years. He was married in 1882 to Miss Grier, of Ashe County.

In appearance, Dr. Phipps looked to be the big, strong man that he was, in sympathy and intellect. He towered high above the heads of his fellow-men, and that so magnificent a physical specimen should have been laid low with such sudden fate adds poignancy to the pity of his fate.

Dr. SAMUEL MORRILL.

Dr. Samuel Morrill was born August 26, 1829, at Goffstown, N. H. He was the second son of David L. Morrill, a physician in early life, and later Governor and United States Senator from New Hampshire.

Dr. Morrill entered Dartmouth College in 1846, when quite young, where he remained for three years. He then commenced the study of medicine in the office of Timothy Haynes, of Concord, and later completed his studies, graduating from Harvard University in 1852. He practiced his profession in East Northwood for a while, and in Boston, Mass.

In 1853 he came South, and spent one year at Wilmington, N. C. In 1854 he removed to Farmville, Pitt County, N. C., where he afterward remained, and where for more than fifty years he engaged actively in the practice of medicine.

During these long years of varied experiences, Dr. Morrill, by his warm and sympathetic heart, by his intensely humane and Christian nature, by his strong sense of duty, by his over-willingness to help others, by his self-sacrificing disposition, and his strong belief in the virtue of therapeutic agents properly administered, made for himself a reputation, the thought of which is comforting and pleasing to those who knew him.

During all these years of active life, Dr. Morrill had been a strong and healthy man, and until the first of October last, was in his usual health, but on that day, while returning from the bedside of a patient, a brisk wind rose, mingled heavily with dust, and as the day passed a severe attack of laryngitis developed, followed later by symptoms of la grippe, which never relinguished their hold, until the vital forces were so far disorganized as to preclude all hope of recovery in the minds of those best prepared to realize and measure its fearful ravage into the fountain of life. And finally when death claimed its victim, on February 25, 1905, Dr. Samuel Morrill, in the seventy-sixth year of his age, fully realized the end was near at hand; and from now on, through all time to come as he sleeps, he hears not, nor can any sound break in on his peaceful dreams, and while his death to us seems so hard, we should be less selfish and the more thankful that he lived with us so long.

Dr. Morrill, like his honored father, was true and just in all his dealings with his fellow-man. He was a scholarly physician of unusual capacity, was an honorary member of the Pitt County Medical Society, a member of the Harvard Alumni Association, and Senior Warden in the Episcopal Church, and in his practice never drew a line of difference between the weak and the strong.

His willingness to serve the public, and his devotion to his family marked the whole course of his life; and though he was not afraid to die, what he dreaded most was leaving his family; but he lived a

good life, and dying, left around him many friends with hearts overflowing with memories of the past, and eyes bathed in tears for their loss.

Dr. ISAAC W. JONES.

Dr. I. W. Jones died at China Grove, Rowan County, N. C., April 3, 1905. Dr. Jones was born in Davie County, April 10, 1829. He received his primary education under the teaching of Professor Peter S. Ney, whom many believed to be the identical Marshal Ney of Napoleon's staff. Later he graduated from Emory & Henry College, of Virginia, and in March, 1856, received his medical diploma from the University of New York. He located near Salisbury, where he did quite a large practice for many years.

Dr. Jones was a brainy man, possessing a most brilliant and retentive memory.

He was an active member of the Rowan County Medical Society, the members of which were always pleased when he arose to speak upon any subject, for his store of knowledge was unlimited.

Dr. S. S. DANIEL.

Dr. Daniel was born December the 28th, 1862, and died of diabetes June 19, 1904. He graduated from the University of Maryland in the year 1887, and began active practice at Winton, N. C., immediately thereafter which he kept up until about two years before his death, when his health gave way, and would not permit active work any longer.

He was married to Miss Willie Garriss, of Winton, January the 16th, 1889. To this union one child was born.

He was a great lover of his profession and represented his county society in the House of Delegates at the Raleigh meeting, at which meeting he was made Councillor of the Second District. He was also President of the Hertford County Medical Society at the time of his death.

Indeed, a true husband, a kind father and a noble-hearted Christian gentleman, honored by his profession and loved by all who knew him.

Dr. WILLIAM HUTSON PRIOLEAU.

Dr. William Hutson Prioleau, of Asheville, died in his native town, Charleston, S. C., on January 6, 1905, of malignant leudocarditis.

His fellow-practitioners in Asheville, who have known his noble qualities, realize how great is his loss to the profession, for it loses not only a member of unusual ability, but a man whose high standards and clean living were an inspiration to others.

Graduating from South Carolina Medical College in 1893, he joined the United States Marine Hospital Service, where he served with credit till called to join his cousin, Dr. Prioleau, in the practice

of medicine in Summerville, S. C. Here he soon won the respect and love of his patients, and on his cousin's death continued to practice there with great success, till called to New York, to go into partnership with Dr. Fred. C. Valentine. Here he would have remained had not his health failed, which caused him to come to the North Carolina mountains, where, in Asheville, he regained his health and built up a large practice.

The details of the life of any doctor are but few, his real record is written in the minds and hearts of his brother practitioners and patients. Reading here, we know that his life was a success, and his death deprives us of a man of a rare type, whose place will not soon be filled.

Dr. GEORGE WHITTAKER REED.

Dr. George Whittaker Reed was born December 15, 1857, died January 10, 1905. Graduated from Candler College with the degree of B. S. in 1880, graduated from the University of Louisville in 1885, from the Medical Department University, Nashville, Tenn., 1895. Practiced medicine in Biltmore village from 1895 until the time of his death. He served one term as coroner of Buncombe County. He was just finishing his second term as postmaster at Biltmore. He was a member of Buncombe County Medical Society, North Carolina State Medical Society, and Mississippi Valley Medical Association. He leaves a wife and one child.

Dr. ALEXANDER CRAWFORD.

Dr. Alexander Crawford was born in Kentucky; graduated from the Louisville Medical College in 1854; died October 17, 1904. Practiced medicine in Bardstown, Ky., until 1889, when he moved to Asheville for the benefit of his son's health. He continued the practice of medicine in Asheville until the time of his death.

Dr. J. H. McBRAYER.

Dr. J. H. McBrayer was born near Forest City, September 5, 1847. He was a son of James and Susan McBrayer. His father died when he was only seven or eight years of age, leaving his mother a widow with several children to care for, and in very poor circumstances. He was very ambitious, and would lie on the hearth at night, and read by the light of a pine knot.

When the war broke out he was only sixteen years of age, but he ran away and enlisted. He had only been there a few months when his mother had him brought home; not being satisfied, he ran away again and re-enlisted. During the time he was in the war he waited on the sick and wounded in the hospital. This created the desire to become a physician. In spite of the fact that he was poor, he

determined to get an education. He entered Rutherford College, paying his expenses by selling clocks and books during his leisure hours and by teaching during vacation. He afterwards entered Wofford College. After remaining there a while, he then returned to Rutherford College, where he graduated in 1873.

He then studied medicine under Dr. T. E. McBrayer, whose father kept a hotel. He was employed as clerk in this hotel, and thus earned enough money to take a course of lectures in Baltimore.

He located at Nicholsonville in 1876, where he built up a large practice, and remained two years. During this time he married Miss Ida Palmer, daughter of D. G. Palmer, of Byersville, on Broad River. After his marriage he moved to Boiling Springs, where he had a lucrative practice.

In 1881 he entered the Atlanta Medical College, graduating in 1882.

In 1886 he moved to Shelby and run a pharmacy in connection with his practice. Shortly after moving to Shelby he was appointed United States Commissioner, which position he held for eight years. In 1898, he took charge of the Shelby post-office, and remained postmaster over four years. His health began to fail in 1902, and the next year went to Johns Hopkins Hospital for treatment, where he was much benefited, but not entirely restored to health. In 1904, he moved to the country in order to regain his health, but instead of improving he gradually grew worse, and gave up all practice except in his immediate neighborhood. He soon began to suffer with dropsy, and was confined to his room. On January 28, 1905, he died quietly and rather suddenly in the same room in which he was married. He lived to be fifty-six years of age. He was buried at Camp's Creek Church with Red Men and Masonic honors. A large concourse of friends and relatives came to witness the last sad rites. He was a lover of nature and good books, such as the works of Shakespeare, Irving, etc. He was a member of the Methodist Church from his youth up, and the most beautiful part of his life was his devotion to his wife and children.

Dr. GEORGE MEBANE IVIE.

Dr. George Mebane Ivie, of Leaksville, N. C., died at the Winyah Sanitarium, Asheville, N. C., on January 22, 1905.

As a last resort, but with slight hope of his recovery, he was carried to Asheville for treatment, but died in a few hours after reaching there.

Dr. Ivie was born in Patrick County, Va., April 6, 1863. He was the third son of William S. and Sallie Scales Ivie. His early life was spent in the country; it was here in Nature's school that the first impression of his life-work came to him. Having inherited a

medical nature, and a desire for the practice of medicine, this nature began early in life to assert itself. The attention it seemed to please him to give to the sick and the manner in which he administered to their needs could but suggest that his life-work would be in the interest of suffering humanity. He received his literary education in the schools of his native State. After teaching for a few years he entered the Baltimore Medical College for the consummation of the most cherished hope of his boyhood, that of being a physician. He graduated from this institution with high honors in the year 1893, after which he located at Stoneville, N. C., where he was a successful practitioner for eleven years, removing from there to Leaksville, N. C., in the latter part of the year 1903.

He was married in 1895 to Miss Mattie Smith, a daughter of Mr. N. S. Smith, of Stoneville, N. C. His wife and two small children survive him.

In early manhood he joined the M. E. Church, living a consistent member until death. His body was laid to rest in the family plot in the Methodist Cemetery in Leaksville on January 24, 1905, with the beautiful and solemn rites of the Masonic Order, of which he was a member.

What his death means to his loved ones and the community can best be told in the words of his pastor: "In the death of Dr. Ivie the community has lost a good citizen and a most excellent physician, the church has lost an honored member and his family a kind and devoted husband and father."

Dr. Ivie, at the time of his death, was Secretary and Treasurer of Rockingham County Medical Society.

Dr. JOHN R. McLELLAND.

Dr. John R. McLelland died in Mooresville, N. C., January 30, 1905, aged fifty-four years. He was the son of a physician, was born in Iredell County, and received his primary education in the common schools of the county. He received his classical training at the Statesville Male Academy from Professors Hill and Burk. He studied medicine with the late Dr. M. W. Hill, of Statesville, and graduated from the Washington University School of Medicine of Baltimore, February 22, 1873. He came to Mooresville June 16th, of the same year, and entered into a partnership for the practice of medicine with Dr. S. W. Stevenson, who was a class-mate in medicine, and had some time prior to this located in Mooresville. This partnership continued until his death.

Dr. McLelland was one of the leading physicians of Iredell County. He was kind to his patients and greatly beloved by them. He was extremely ethical, and looked upon the practice of medicine as an honorable profession, and not as a mere trade with which to get money.

He was an active member of the State Medical Society. A man who typified the ideals of the olden South, he was learned and benevolent, and in his bearing to every one he was gentle and left the impress of a rare nature and a refined and ennobling personality.

He was a combination of the practitioner of the old school and the modern, intense physician, whose progressive ability commanded the appliance of the tested sciences of advance. He was also a political leader of much sagacity. He represented Iredell County in the House of Representative in 1893, and again in 1897. He was the first chairman of the Committee on Health, the committee being added to the list of legislative committees for the first time during the session of 1893. He was once a member of the Board of Directors for the A. & M. College, and was the State's proxy for the North Carolina Railroad at the time of his death.

Dr. McLelland married Miss Mary D. Rankin, daughter of the late Dr. Samuel Rankin, of Rowan County, N. C., in November, 1878, who died in 1888.

He afterwards married Miss Emma Rankin, daughter of Dr. Watson Rankin, late of Cabarrus County, who survives him.

He left three children, Howard, Davies and Miss May McLelland.

Dr. McLelland had two brothers, Rev. W. R. McLelland, of Statesville, and James H. McLelland, Register of Deeds for the County of Catawba, who survive him, and one sister, Mrs. S. W. Stevenson, of Mooresville, who died October 28, 1885. He was a loyal member and ardent supporter of the Presbyterian Church, a good neighbor, a kind husband and father, and an excellent citizen, and his early death is much to be deplored.

North Carolina Medical Society—President's Address.

DR. D. T. TAYLOE, M.D., WASHINGTON, N. C.

Ladies and Gentlemen and Fellow-Members of the North Carolina Medical Society:

My first and pleasing duty is to acknowledge the honor which has been conferred upon me. To be selected President of this organization is one I assure you I heartily appreciate.

I realize the position which I now fill, though sufficient to satisfy the loftiest ambition, is surrounded by work and responsibility; but happily, however, in the performance of my new duties I shall not be without the able co-operation of the members of this learned Society.

Gentlemen, I tread in the foot-steps of illustrious men, men whose superiors it is my happiness to believe are seldom found in the medical profession. They have given to us the broad foundation upon which we now stand, and which we are destined to become one of the strongest medical organizations in the South; and as time rolls on and the scheme of our new re-organization is perfected, it is not too much to hope it will be for the betterment of the North Carolina Medical Society and every member therein.

I have selected as the subject of my remarks, "The Growing Need of Hospitals and Isolation Hospitals." It is known to those who are conversant with the hospital movement in this country, that the great majority of the present hospitals have been established during the past twenty years; that the growth of hospital facilities during that time has not kept pace with the general growth of the country is also known.

With a population rapidly approaching one hundred millions, the United States now has within its borders about six thousand institutions for the care of the sick and injured. This includes institutions for the insane and the sanitaria for

the various special diseases. There are about three thousand hospitals proper, or, one for each thirty thousand inhabitants. These have a bed capacity of about three hundred and fifty thousand. Fully nine hundred, or nearly one-third, of the hospitals, are to be found in the one hundred largest cities. These have a bed capacity of about one hundred and five thousand. While the larger cities are, in most instances, well supplied with hospital facilities, there are a large number of small places with a population of from four thousand and upwards in which there are either no hospitals or else the facilities are inadequate to the needs. While in most instances the cities without hospitals or with insufficient hospitals are within easy reaching distances of the well-equipped cities; and while some of the features of hospital care can be provided by graduate nurses, the growing appreciation of the hospital and the increased interest by the general public is calling for the further extension of the hospital movement.

The especial need is for small hospitals, hospitals which by giving the best general service more nearly approach the personal care and comforts of the home. In these there is not apt to be found the constant rush so often found in the large hospitals, and, as a result, the attention given to the individual patient is apt to be more complete and thorough. In expressing this opinion I do not wish to be understood as in in any way disparaging to the large hospitals. Both large and small have their distinct missions to be performed. The point is, there is need of hospitals in localities where the large hospital is an impossibility.

This is an age of progress; intelligence is being disseminated by the press, and our people are being educated. In the scientific world great strides are taken. The rapid and wonderful growth of the industrial interest of the country is producing an equally rapid growth of accident cases, and these cases demand immediate attention. There is no time in which to transfer the patient to a hospital one hundred miles away. Immediate care must be had, or lives are jeop-

ardized. Another point to be brought out in this connection is this: the family of the average industrial worker is large; the home is not proportionately large, and as a result the conveniences for caring for the sick and injured are not adequate, and the hospital is very naturally looked to to supply this need. Another demand is to be found in the increased attention and care given their members by the churches and various fraternal organizations who, in the main, prefer to give their assistance, in times of illness or accident, through the medium of the hospital, realizing that through this medium the better care is obtained. The general welfare of the community also demands the hospital as a means by which the well may be protected from the sick by the prevention by isolation of the spread of contagious diseases. Many other reasons can be advanced in favor of the general extension of the hospital facilities of the country. If our hospital had no reason for its existence beyond the relief of individual suffering and the cure of individual disease, it would still play an important part in the philanthropic activities of the community. It is this part of its work to which public attention has been and is largely directed; and it is this part of its work which, in the minds of most people, constitutes the chief reasons for its existence. This is a very narrow view to take. Great as is its service to the community in this particular, it is only a small part of the service which it really renders. It is an educational institution; an institution through which alone doctors and nurses can be trained, and through which alone medical science can be advanced, that our hospital, like others under equally enlightened management, has its chief claim upon the public. It is only by providing hospitals where the art of healing can be practically taught, that doctors and nurses can be prepared for their ministrations of mercy, whether to the rich who can afford to pay in money, or to the poor whose only recompense is thankfulness. And it is only by providing such hospitals that medical and surgical science has made the marvellous

advances which we have witnessed in our generation and which is hoped only presages the progress still to come.

To the medical student the modern hospital affords an opportunity to see the theories of the text-books illustrated, to acquire a certain amount of skill and manual dexterity by experiments of a practical nature; to come into actual contact with the sick; to develop the powers of observation so necessary to success in medical practice.

To the nurse the hospital offers opportunities for the exercise of the best gifts. It is the entrance into a larger life; a school in which mind and hand and heart are disciplined and trained to supplement in the most efficient manner the work of the physician in the war with disease.

In our hospitals are assembled the sick and the maimed, who are not merely healed themselves, but by whose healing that is learned which will heal others in generations to come. The physicians and nurses who are there, both to heal and to learn, the laboratories and surgical apparatus with which alone they are able to put their learning to its highest use and benefit. Such a conjunction in a hospital prevents more disease in the generation to come than it actually cures in the generation with which it is immediately and personally dealing. This educational function of hospitals should receive the same prominence which is given to its actual relief of human suffering, and this function which hospitals under private management are performing is not the least claim to their liberal support by our people. Those who have kept in close contact with hospital growth in the United States have not failed to note the rapid increase of hospitals established and owned by individual physicians. This movement has not by any means been confined to the physicians located in the large cities; in fact, it is, we think, most marked in the small cities or large towns. It can, without question, be accepted as direct evidence of the growing appreciation of hospitals by the medical fraternity. And that thes hospitals in the main receive a very cordial support may be accepted

as evidence of the growth of public sentiment in favor of hospital treatment.

The establishment and successful operation of private hospitals in small towns are still further proof of the feasibility of such hospitals. The building and maintaining of private hospitals involves so much business anxiety and so much diversion of energy, that few surgeons feel willing to assume the cares of such enterprises, and yet there can be but little doubt that the control of a hospital is one of the largest factors in the success of a surgical and general practice, and there is no question but that from now on a considerable proportion of hospital growth will be due directly to individual physicians who feel the need of and realize the benefit to be had from owning and controlling private hospitals. But few subjects in relation to modern practice of surgery and medicine have caused more bitterness of feeling than the management of hospitals where too many wished control, therefore prejudicies and jealousies must be laid aside for the sake of the common cause. Mistakes must be overlooked, for much is to be learned, and learned by experience. Real success in any line does not consist in never making mistakes, but in never making the same one twice.

People sometimes talk as if a hospital was of benefit only to the patients treated there. No greater mistake could be made. There can be no great doctors without big hospitals. The hospitals give more education in six months than general practice will give in six years, and the spur is not simply on the young fellows beginning their work, the greatest surgeon alive has a stimulus in his hospital work if he knows that in his clinics there are perhaps numbers of intelligent and sharp observers watching to catch him at fault in anything. The community with a hospital has far better doctors than the community without one. So it has come about that the modern hospital does not stand for charity merely, but for almost every step that is taken forward in medical discovery. It means an advance in surgical skill that would have been im-

possible in any other way. It means trained nurses, too, for few nurses could be trained outside the hospital; so, take it altogether, about every modern comfort that can be found at the bedside of the rich can be traced back to the bedside of the poor in modern hospitals.

"We have too many churches and too few hospitals," said a noted doctor in a recent address. Some people may be inclined to disagree with him, but the statement as regards to our country is nevertheless true. The Great Physician when on earth left three distinct commands, "Go preach the gospel," "Go teach," "Heal the sick." There is no doubt that the first of these commands is receiving attention. At least if it is not, it is not because there are not sufficient churches erected for that purpose. Doctor Newell Dwight Hillis, of Brooklyn, in an article in "Everybody's Magazine," says that we have now one hundred and sixty-nine different denominations in the United States. Nothing is risked in saying that business men are now engaged in starving to death one hundred and sixty of them. In one town of eighteen hundred inhabitants visited by Dr. Hillis, eight churches and eight ministers were struggling for an existence. While this condition of overcrowding of churches is seen in every State, it is hard to understand how the command, "Heal the sick," can be forgotten by the majority of Christians. The burdens of hospital work are borne by a few, not the churches or church as a whole. While magnificent progress in hospital work has been made in the last decade, the needs are great. We need wards for contagious diseases; hospitals for chronic and incurable cases; orthopedic hospitals; sanitariums and homes for consumptives. And we need a great increase in endowment of the existing hospitals. The public needs educating, the church needs educating along hospital lines. Princely givers so common in the European countries are not to be found in large numbers in this wealthy country.

A Christianity or a philanthropy that meets the demands of the times will foster colleges, libraries, orphanages, homes

for the aged and hospitals. To build libraries and place books in the hands of those eager for information is a great work, but to repair the defective and failing sight so that one can see to read and work is a far greater deed. To endow colleges so that the young can have educational advantages is highly commendable, but to remove disease and restore health and strength so that the helpless may be self-supporting and the body may have sufficient vigor to sustain mental labor is a far more worthy work. To establish polytechnic institutes in which young men may receive special training for a life calling is the doing of generous hearts, but to take deformed and misshaped bundles of humanity and remove the crook from the back, straighten the twisted limb and deformed hands and feet and take the limp out of the gait so that the afflicted ones can enter the race of life freed from physical impediments is the noblest work man can do for his fellow-man. The library, the college, the hospital—these three are here to abide, but the greatest of these is the hospital. We do not undervalue the library or the college, but the need and value of hospitals are in the present only dimly discerned. Eyes with which to see to walk, work and read are of far greater value than a book to be read; hands, feet and limbs with impediments and deformity removed are more necessary to the masses than a school of technology; health is of much greater importance to the average man than college training. Without eyes to see the library is useless; without hands to toil manual training is impossible; without health an education loses much of its practical value. Hospitals are the greatest of public necessities, for they serve humanity in the time of greatest need.

I believe the best evidence of a progressive town and the greatest benefactor to its people in this day and generation is an up-to-date hospital.

A great opportunity now presents itself. Hundreds of our best people are going to the cities and hospitals of the North for work in surgery, while hundreds of suffering men, wo-

men and children remain at home for want of suitable places they can reach where such work may be done.

Physicians of North Carolina,I appeal to you, ought this condition to continue? Let the physicians of every city, town and county unite and set themselves to work for the one common purpose of building and equipping the best and most modern and up-to-date hospital their money will buy.

First, it is economical, for that thousands, yea, many thousands of dollars are going from us and enriching the North which we ought to keep at home.

Second, it puts relief in easy reach of hundreds of helpless poor who thereby are made strong, useful and profitable citizens, useful to the State for that they are producers and no longer consumers.

Third, it is humane and Christian-like.

Good hospitals within the easy reach of thousands of rich and poor alike are relieved of their suffering through the instrumentality of the physician and his skill.

No one can deny the value of the hospital. It is a part of medical progress, and it has come to stay. The doctors whose services and time are needed and are a benefit to the hospital are men who have the power to raise the standard of work of the hospital, and who command a sufficient practice among paying patients to contribute materially toward its maintenance.

The care of contagious and infectious diseases in isolation hospitals has every advantage in caring for the same class of cases in private homes, for no class of diseases has the public made so little provision as for those ordinarily styled contagious or communicable. In some instances small-pox has run its course where the disease originated, even though it meant the risk of hundreds of valuable lives, and the result is, physicians are largely left to fight single-handed, not only the disease itself, but often in addition ignorance, superstition and dirt, conditions that foster diseases of all kinds.

We have made much progress in sanitation within the last

decade, but so much remains to be done that profuse congratulations of ourselves on what has been accomplished are hardly yet in order; rather in many towns we need some stimulus to urge us forward to safer grounds.

The existing boards of health in each county can do much to help forward the work of erecting isolation hospitals by urging and advising the county and town officials the great necessity of such institutions.

It is not necessary to have either large or expensive buildings for this class of diseases. At a cost of approximately three thousand dollars a one-story cottage capable of accommodating fifteen to twenty patients, bath and disinfecting rooms could be erected. This form of cottage is especially desirable for large and small towns. As these towns grow, as most of towns now of days are doing, additional cottages can be erected at a small outlay. The money saving and life-saving work of such a system will do more to commend such institutions to public confidence than any other form of hospital work.

The quarantining of the homes of the poor has a grave meaning, for the men who struggle for bread, for comfort, health and life are only half successful at best. When his bread-winning opportunities are cut off, his situation is sad in the extreme. The quarantine of wealthier homes is decidedly inconvenient to say the least. When families are crowded together in hotels and apartment houses, the quarantine placard means serious business to all concerned. The isolation hospital solves the problem for the rich and poor alike, and the beauty of the scheme is the comparatively small outlay that is really necessary for the establishment of such work on a proper basis. Most towns and counties should be glad to pay for such institutions, as in the long run it would lessen expenses, as compared with the present system, and results would be far better, hence the cost of maintenance need not deter the officials of the town and county from doubling their usefulness to the community at

large by erecting an isolation cottage and thereby doing away with the rude, uncomfortable pest-house where we do not feel willing to force our patients to stay, with its accompanying inconveniences.

In conclusion, gentlemen, a few words relative to our organization. I can not refrain from congratulating the Society on the success the new plan of re-organization has achieved, sufficient beyond all doubt to satisfy the most skeptical. In 1903 the State Society had nearly five hundred names on the roll, but only 283 were in good standing (on account of dues). In June, 1903, we re-organized, and at that time had less than ten county organizations in the State. In May, 1904, we met and had double the attendance we ever had at any State Society meeting, and there has been sent out transactions for 1904 to 1,065 members whose dues are paid up for that year. This speaks for itself. However, I wish to add that this fine showing is to a large extent due to the efforts of our efficient Secretary, Dr. J. Howell Way, who has spent much time and energy in furthering the progress of this great work, there being few men who could have accomplished such results.

I wish to impress upon the different county organizations the importance of having an efficient, painstaking and business-like secretary, as much of the work devolves upon him, and much of the success of the society is through his efforts.

The Society is also to be congratulated upon having such efficient members in the Senate and House of Representatives as to successfully defeat the progress and invasion in our State of quacks, osteopaths and other designing fakes. To this same body is due also our thanks and the sincere thanks of the entire State in establishing a State laboratory of hygiene, which was much needed and is a public beneficence.

Gentlemen, I assure you that I appreciate the thoughtful interest with which you have listened to my remarks, and trust I have been able to drop some thought that will be of material help to yourselves and those whom you serve.

The Annual Oration—The Influence of Psychic Phenomena Upon the History of Medicine.

BY BENJ. K. HAYS, M.D., OXFORD, N. C.

Gentlemen of the Medical Profession of North Carolina—Young Ladies of the State Normal and Industrial College—Ladies and Gentlemen:

It is needless for me to tell you that I count it a great honor to be permitted to address you upon this happy occasion.

Nor do I hesitate to affirm that I deem it a far greater privilege to speak to the young ladies of the State Normal School than to the medical profession of North Carolina.

Not because of greater wit, beauty or learning on the part of the ladies. Not because of native gallantry on my part. My reason is far different from that.

The men who are gathered here this evening are, many of them, old enough to be my father. They are fixed in their ideas and in their ideals, and no words of mine can change them one iota.

The work of a doctor at best is but patch work. Every patient may be likened to the flame of a tallow candle flickering in the wind. If the doctor, by his skill, can keep it from being blown out, in a short time it will burn down and die of its own accord.

But the young woman who expects to become a teacher,—and in the broadest sense of the word every educated person is a teacher,—the woman whose life-work is the dissemination of truth, will exert an influence, not only upon those about her, but upon generations yet unborn.

History records no crime, no pestilence, no famine, no scourge of any kind that can not be traced to ignorance.

We have not yet thoroughly emerged from the dark ages. Only the dim morning twilight has broken upon our vision;

and the institution that is sending out over the land intelligent young women whose avowed purpose is to carry light into dark places is the most beneficent gift that Almighty God has yet bestowed upon a people.

Some years ago a correspondent of *The News and Observer* advocated the name of the President of this institution for Governor. And I said what a mistaken idea of duty; there are a thousand men in the State who would make us an acceptable Governor, but there is but one man in North Carolina fitted to be President of the State Normal and Industrial College, and that man is Dr. Charles D. McIver.

Recognizing as I do the unseen influence of the teacher, the wife and the mother to build up or tear down a commonwealth, I declare unto you that in your future career is locked the destiny of North Carolina.

Your united efforts would make possible any dream of glory which you have for your native State, and if I can persuade you to take to heart the simple message which I bring to-night, I believe that through you great good will be accomplished.

Your patient attention, therefore, is desired while I make a brief inquiry into the relative claims of two classes of beings who profess power over disease.

One class is composed of regular physicians, such as are gathered here this evening; the second is composed of that host of medical pretenders, represented all over this country by such people as the Homeopathist, Osteopathist, Spiritualist, Faith Doctors, Christian Scientists, Advertising Specialist, Quacks, Charlatans, and the makers and venders of patent medicines.

It can not be said that these people are necessarily bad; nor that they are ignorant or insincere.

The question which I present for your consideration is this: Are all, or is any one class of them worthy of the confidence of a community?

Are the members of the medical profession worthy of the confidence of the community?

In what way does the ethical physician differ from all other claimants of power over disease?

To answer these questions we will review briefly the history of medical cults; we will undertake to account for their seeming success; and conclude by contrasting them with such men as are gathered here this evening, whose lives are devoted to scientific research and to the alleviation of human suffering.

PRIMITIVE MEDICINE.

Among all primitive people the office of priest and physician has been the same.

The medicine man of the North American Indian corresponded with a class in South America described as "priests, jugglers and physicians"; in Africa as "doctor, priest and witch-finder"; and in Siberia as "magicians."

A more advanced stage of society was exemplified by the Druids of ancient Brittain, who were ministers of state, priests and physicians; and by the Magi, who were the members of the learned and priestly caste of ancient Persia.

This unity of function of priest and physician is explained by the fact that all diseases were thought to be due either to the anger of the gods or to demoniacal visitations. And as the priest had power to conciliate the gods and to combat the influence of devils, what more natural than that the sick man should be intrusted to his care?

Were a man suffering with typhoid fever, pneumonia or consumption, he was thought to be conjured, bewitched, or his body possessed by a devil, and the only known remedy was exorcism by the priest.

Even when a drug was administered whose effect was observed to be very powerful, its action was attributed to the spirit which resided in the plant being transferred to the patient.

EGYPTIANS.

"The medical practice of the Egyptians was founded upon incantation and astrology. They divided the body into thirty-six parts, believing in an equal number of demons, to whom

those parts were intrusted, and to invoke whose aid in sickness was the principal duty of the physician, each spirit being called upon to cure his own peculiar portion."

THE HEBREWS.

The ancient Hebrews possessed rare knowledge of preventive medicine, as is made clear by reading the Mosaic law; yet when disease appeared it was often attributed to supernatural causes, and in the case of Asa, who consulted a physician in preference to a priest, the priestly scribe records with pleasure that he "slept with his fathers."

SCIENTIFIC MEDICINE.

Scientific medicine had its origin among the Greeks. They were the first people, so far as we know, who attributed disease to natural causes. Their medical practices were well abreast of their other scientific attainments; and when glorious Greece bowed her head in subjugation to material Rome, the progress of medical science was checked for nearly two thousand years.

Among the Romans the medical practice was usually in the hands of Greek slaves; and after the fall of Rome, the torch of knowledge was kept alive for us by the Arabians and the Jews.

MEDICAL CULTS.

In Christendom the history of medieval medicine is simply a history of superstitions and of cults. And though men boast of the light of the twentieth century, we are to-day surrounded by superstitions and by cults for which there can be no more logical defence than for witchcraft, astrology and the black-art.

It would be impossible in the time allotted to me to give even the names of the various schools of quackery that arose and flourished in Europe in the dark ages. Only a few will be mentioned, and these, not because of our interest in them, but that I may the more forcibly impress upon you the per-

nicious practices of the charlatans, dupes and religious fanatics of our own time.

INVOCATION OF SAINTS.

The early Christian church would not permit its members to consult a physician. The fathers lived in filth, priding themselves upon going a long number of years without taking a bath.

Instead of learning from the writings of Moses that disease was due to contamination, it was thought to be due to divine wrath, and naturally the remedy was sought in prayer.

The aid of the saints was invoked, and, as with the Egyptians, certain saints were thought to exercise a special influence over certain diseases: thus, St. Vitus cured chorea, or "St. Vitus' dance;" St. Anthony cured erysipelas or "St. Anthony's fire"; St. Martin cured drunkenness or "St. Martin's evil:" In this way the names of thirty-one saints have entered into modern medical literature.

ASTROLOGY.

We must pass over astrology, necromancy, magic and the black-art practices that were early introduced into Europe from the East.

Each had its influence upon medicine; each tended to retard scientific research; and the votaries of each used the same argument to combat truth that is used by the ignorant and credulous to-day, namely, that the teachings of science are contrary to the Bible, hurtful to religion and atheistical in their tendencies.

Even now men have not learned of God that

"Though he thunder by law, the thunder is yet his voice."

ALCHEMY.

In the wake of the astrologer came the alchemist, seeking a universal solvent, the philosophers stone and the elixir of life.

These men were not always physicians, yet they profoundly effected the medical practices of their time.

INSANITY.

The history of insanity is of special interest.

From earliest times, to almost within the memory of living men, insane people were thought to be possessed with devils. As a result of this belief the treatment not only did not tend to effect a cure but actually caused insanity to spread.

Prolonged attacks of hysteria have a tendency to produce insanity, and hysteria is highly contagious. Ever and anon great epidemics of hysteria have swept over Europe, and at times have been fraught with fearful consequences.

Whole towns have been so affected that every inhabitant appeared to be a raving man. The children's crusade of the year 1212, was an hysterical expedition that cost many thousands of lives.

It is not rare for men of great intellectual power to become insane on some one subject, and persuade simple-minded people that they are inspired. Swedenborg was a striking example of this. George Fox, the founder of the Society of Friends, was a great and good man, yet a pronounced psycopath, and Alexander Dowie and Mrs. Mary Baker Eddy, of our own time, belong in the same category.

Not more than a century ago an English woman, when sixty-five years of age, created a wide-spread belief that she was about to become the second mother of Christ.

WITCHCRAFT.

The history of witchcraft, with its attendant evils is familiar to all. It has been estimated that no less than nine millions of people were burned for this supposed crime. And since witches were thought to cause various forms of sickness, how fearful must have been the ravages of disease when no other means were employed to check its spread than the persecution of these innocent victims.

It may seem strange that James I, to whose enthusiastic love of learning we are indebted for our English Bible, should

have written a book in the defence of the belief in witchcraft. But if you will take the trouble to compare this work with Mrs. Eddy's "Science and Health," you will find more learning, more logic, fewer contradictions and less tomfoolery in King James' Demonology than in "The Key to the Scriptures" of the modern Christian Scientist.

"KING'S EVIL."

One of the most wonderful curative agencies recorded in history was the touch of the English Kings. It was thought to cure many diseases, chief among which was scrofula, or "King's Evil."

The practice began in the time of Edward the Confessor, and continued up to about two hundred years ago. The evidence in favor of its efficacy is simply marvelous. Priests and physicians who lived in the noon-day glare of Elizabethan culture, agreed that to question the power of their queen to cure scrofula by the touch of her finger, was to question the evidence of their own senses.

Were Mrs. Eddy to but read of these cures she would turn as green from jealousy as the milk in which a mad-stone has been boiled.

TALISMANS.

A medicinal agent which is still in use among ignorant people was introduced into Europe by the returning Crusaders. It was the use of magic stones or talismans.

Readers of Scott will remember his novel, "The Talisman," tells how Richard the Lion-hearted, was cured of a fever by Saladin, and the stone employed is said to be still in existence.

These stones were formally employed to cure snake bite, but the juice of the Indian maize, discovered by Columbus, has in recent years become such a popular remedy that talismans are now limited to the cure of hydrophobia.

POLYPHARMACY.

But one other mediæval practice, the shadow of which still hangs over us will be mentioned. It is that, which in our day, is called polypharmacy; the mixing in one dose of a large number of drugs, often of a most disgusting nature, and given for the most absurd reasons. It is interesting to examine the formulae of these old prescriptions, some of which are still in use. Many of them are not one whit less absurd than the witches broth of Macbeth which contained:

Fillet of a feny snake,
Eye of newst, and toe of frog,
Wool of bat and tongue of dog,
Adder's fork, and blind worm sting,
Lizzard's leg, owlet's wing,
Scale of dragon, tooth of wolf,
Witches' mummy; maw, and gulf,
Of the ravin'd salt-sea shark;
Root of hemlock, digg'd in the dark:
Liver of blaspheming Jew,
Gall of goat and slips of yew,
Silver'd in the moon's eclipse:
Nose of Turk, and Tarter's lips;
Finger of birth-strangled babe,
Ditch delivered by a drab,
Make the gruel thick and slab:
Add thereto a tiger's chaudron?
For the ingredients of our cauldron.

Through all this maze of ignorance and superstition, from the days of Hippocrates to the present time, there have been men who have conscientiously pursued the study of medicine along scientific lines. But they have ever found the time out of joint, and their silence has often been that of a martyr's grave.

There was a common expression in Europe that where you find three physicians there are two atheists. But when we remember that it was counted atheistical not to believe in witches, demoniacal possessions and the manifestation of divine wrath in disease we may well question if these so called

atheists did not in reality have a higher conception of deity than the howling fanatics who sought their ruin.

NINETEENTH CENTURY CULTS.

At the dawn of the nineteenth century the medical slogan was "puke, purge, bleed and blister;" and fortunate was that patient who escaped this quadrated ordeal.

The death of Washington, which it will be remembered, occurred in 1799, is now thought to have been hastened rather than retarded by the treatment which he received.

From this condition of affairs a reaction was inevitable, but, as is usually the case, the reactionist swung further from the truth than those whose error they sought to correct.

HOMEOPATHY.

It was in 1796, that a German physician by the name of Hahnamann, announced to the world a new system of medicine, known as Homeopathy.

His doctrines were three. 1st. That chronic disease is the result of a humor in the system, which when it finds its way to the surface, causes the itch. 2nd. That the more you dilute and shake a drug the more powerful it becomes.

These two doctrines have long since been repudiated by his disciples.

The third oracular utterance of Hahnamann did not originate with him, but has come down to us from Hippocrates.

It is the familiar "similiar similibus curantur," which is still the battle cry of the Homeopaths. This dictum is without scientific value, but it sounds well, and being rendered in Latin gives an air of learning to him who uses it.

For a time the school of Homeopathy flourished, but to-day it is on the wane. Where a physician advertises as a Homeopathist it is for one of two reasons. He is either too ignorant to be admitted into the ranks of scientific medicine, or he wishes to use the word Homeopathy as a trade mark to catch the eye of persons prejudiced against ethical phy-

sicians. The advertising pages of their journal are filled with the names of standard remedies.

In the latter half of the nineteenth century we have seen the development of the patent medicine business; the birth of Christian Science; the rise of Osteopathy, and the appearance of pseudo-schools, cults, quacks and charlatans too numerous to mention.

PATENT MEDICINES.

The American people spend nearly one hundred million dollars yearly for patent medicines. It is safe to say that the great mass of this product is harmful to the person who uses it. It contains alcohol, opium, cocaine or other hurtful drugs. Much of it is inert, doing neither good nor harm, while a small per cent of it is probably of actual benefit.

Every thoughtful person knows that the patent medicine business is pernicious, but public opinion in this country is controlled by the press; and since the patent medicine men pay large sums for advertising, we can not expect the daily papers to wage war upon their best customers.

One of the most healthful signs of the times known to me is that some of the leading magazines in the North refuse to publish patent medicine advertisements.

The most hurtful literature in this country to-day is the patent medicine almanac. Elbert Hubbard has truly said that their object is not to tell men what will cure their diseases, but to remind them that they are sick.

FAITH CURES.

Contrast the teachings of the Christian Scientists, who deny the existence of matter, with that of the Osteopaths who attribute all disease to the dislocation of some bone, muscle or other tissue.

How are we to account for the success of such widely varying schools? The answer is clear. It is but the universal application of the law of faith cure.

No matter what the agent or who the physician the one essential to success is faith on the part of the patient.

By faith men swallow cart loads of patent medicines and believe themselves cured of diseases they never had; by faith the mother gives her infant the harmless powders of the Homeopaths, while nature restores the child to health; by faith a man with pneumonia sends for an Osteopath, has the vasso-inhibatory nerves of the lungs stimulated by massage, and receives benefit from the hope engendered; by faith neurasthenic men and women have their minds diverted by Christian Scientists, and straightway their imaginary pains are forgotten; and the underlying principle of all these cures differs not one iota from those accomplished by the Indian medicine man or the naked savage in the equatorial Africa.

Let an agent be

> **"A spirit of health or goblin damned,**
> **Bring with it airs from heaven or blasts from hell,**
> **Be its intents wicked or charitable,"**

if it but command the faith of the patient beyond all question its tendency will be to affect a cure.

In this way every cult, quack and faith curist can obtain countless testimonials. It is but necessary to find a patient. Let his disease be real or imaginary. Persuade him that the remedy employed will effect a cure. Nature is already working toward that end, and the hope engendered will hasten the happy result.

Straightway a certificate is given of cancer or consumption cured. The patient did not have the disease of which he claims to be cured, nor does the attendant know what he did have.

This method of practice is going on about us all the time. The quack is sometimes ignorantly sincere, more often he is an open fraud. He is not familiar with the laws of health, he has not studied the nature of disease, and he cares nothing for the good of the patient save in so far as it affects his own pocket-book.

THE ETHICAL PHYSICIAN.

And now, in contrast, let us note the claims of the ethical physician.

The Regular Medical Profession, before admitting a member to its ranks inquires into his moral character. He must be educated, and must have passed through a course of training, lasting through a period of years, at a regular medical college.

His qualifications must then be passed upon by an austere board of medical examiners.

To remain in good standing in the profession he must devote his entire time to the study and practice of one or more of the various branches of medicine. He must treat his professional brother with fairness, and must not keep secret any remedy known to him whereby disease may be combatted.

With the best ideas of all the past ages concerning the nature and cure of diseases, he is presumed to be familiar, and of new and valuable discoveries in medicine, it is his duty to keep informed.

When called to the bedside of a patient the physician believes that he should and does know better than anyone else the nature of the disease with which he has to contend, the remedies indicated, and the proper means of their administration.

Yet, how rarely is it possible to take any patient through a serious illness without finding him advised by a host of well meaning but misguided friends.

Each is positive that the agent or remedy advised by him will effect a sure cure. These advisers have not studied the disease with which your patient is suffering, nor do they know what would be the effect of the drug which they advise. Moreover, as a rule, you will find that they are people who would not be one of a company of thirteen; they would not set out on a journey on Friday; they would not leave an infant in the room with a cat for fear that the cat would suck the

baby's breath; and it is i nno spirit of idle jest that they carry in their pockets the "left hind foot of a graveyard rabbit."

My friends, my condemnation is not of individuals, it is of ignorance. My plea is not for the medical profession, it is for humanity.

The contrast to which I would call your attention is a contrast between truth and falsehood, between science and superstition, between knowledge and ignorance.

I do not ask for a more liberal support of the medical profession, but that men may be instructed in nature's laws that disease may be prevented rather than cured.

Teach men the value of pure air, pure water and pure food; of rest and of exercise; of change of environment; let them never forget that cheerfulness is contagious, and is characteristic of angels, while a grumbler is the devil's own partner. Teach men to think pure, healthful, God-like thoughts, and you will create—not a demand for more physicians—but a condition in which the medical pretender can find no place in our civilization.

THE CLAIMS OF EACH CLASS.

And yet, in spite of all precautions, we know that some diseases will continue to appear in our midst.

When medical aid is required, whom will you employ? the man whose photograph appears at the head of his column advertisement, but who has not seen you and knows nothing of your condition? the man who has recently appeared in your community as the exponent of the latest medical fad; whose name is ever on the lips of a few hysterical women, but of whose ability you have no valid evidence? the widely advertised secret remedy recommended by a friend who knows neither the nature of your disease nor of the remedy advised? the religious fanatic, who proposes to cure your every complaint by prayer, even though you are ignorantly or wilfully violating the eternal laws of God? Will you go to those who have no power over disease, save in so far as they pander to

the morbid imagination of their patient; or will you go to the trained and tried physician who is at once your neighbor and your friend? who has shown himself worthy of every confidence, and has devoted years of labor to the study and practice of medicine, and has stood for everything in your community that makes for civilization and enlightment.

A PERSONAL INCIDENT.

At the beginning of the civil war, there went from the State of Virginia a seventeen year old boy. He was in the battle of Bethel, at which fight the first blood was shed.

First a member of the Halifax Light Infantry, he afterwards became one of Armstead's men of Pickett's Division. He was in almost every important fight that occurred in the State of Virginia, and distinguished himself for bravery early in the war.

Wounded at Malvern Hill, he was in the ranks again when Pickett reached Gettysburg. When the opposing armies were drawn up facing each other, the town of Gettysburg was in the hands of the enemy. It became necessary for Pickett to communicate with someone in the town, and he looked about him for a trusty courier. His eye fell upon this boy. The general placed him upon a horse; gave him a packet of papers, and started him down a road on either side of which was encamped a Yankee army. Soon a volley of musketry was turned upon the boy, and the smoke obscured him from the General's view. When the smoke had cleared away, and it became evident that the boy had not fallen, the General, watching through his field glasses began to await anxiously the boy's return. Soon he emerged from a side street; his head was bowed upon his horse's neck, and horse and rider were moving at full speed. A few random shots came from either side, and then both armies ceased firing and began to cheer. The heroic spirit of that boy had touched the hardest heart in the enemy's lines. Three days later that boy was in Pickett's famous charge up Stone Hill. Twenty paces from the wall he was shot down. He crawled from the

battle field and made his escape. With one arm crushed, and carried in a sling he helped to defend the wagon train of the retreating army. In the ranks again at Spottsylvania Court-house, he was taken a prisoner, and confined for more than a year at Fort Delaware.

When liberty was offered him, he was one of the few men who would not take the oath of allegiance until he was absolutely certain that there was not a confederate soldier under arms.

When this boy returned to his beloved Southland, he read medicine, and located in Granville County, of this State.

For thirty-five years the same heroic spirit that was shown on thirty-five battle fields has manifested itself in the devotion to the practice of medicine. Time and time again, to reach the bedside of the sick and suffering, he has faced the night and storm, wind and rain, hail and sleet. He has been swept down the current of swollen streams, capsized in the mud, lost in the woods, beset by highwaymen, deprived of meals, and yet "alert from the wells of sleep," has carried hope and buoyancy into the sick-room wherever he has gone. And this man, who is but a type of the true Southern physician; who has done no more for suffering humanity than thousands of others have done, are still doing and will continue to do in the future; this man who has answered the cry of the widow and the orphan in the spirit with which he answered his country's call to arms, this man has not gone to his eternal reward, but is none other than my old friend, Dr. Samuel D. Booth, who is now sitting in our midst.

And now, my friends, let me beg of you that you will consider every patent medicine known to you; every Homeopath, Osteopath, Faith Curist, Christian Scientist, quack and charlatan; let your mind run the entire gamut of claimants of power over disease, and weigh them in the balances with the names of O'Hagan, Grissom, Strudwick, the elder Payne, J. W. Booth, Wood, Thomas Pittman, Cheatham and Tucker, and tell me which of these two classes of beings is most worthy of the confidence of a community.

The Annual Essay—The Physician and the Public.

BY JOHN HILL TUCKER, M.D., HENDERSON, N. C.

Mr. President, Ladies and Gentlemen:

In an hour of well nigh desperation, attempting to find a subject for a paper, and believing it should be one of passing interest alike to the laity and the profession, as it was presupposed to be read before a mixed audience, some attitudes of the public towards the physician that have annoyed and perplexed me through a short professional experience came to my mind.

In the first place—what is the right relation that should exist between Public Education and the Medical Profession?

Possibly there is no physician so young or of so limited experience in dealing with his fellow men as not to have been chagrinned at one time or another by an attitude of careless indifference on the part of many people, who should know better, towards the great truths of modern medicine and surgery. It takes, indeed, but a short excursion from our offices or homes out into the world to hear of the wonderful cures wrought by a nostrum of unknown formula, after every available doctor had been consulted and failed to relieve or cure. It may be, we hear of scores of people who were either killed, lost their arms, or left to go through the remaining days of life in misery and suffering as a direct result of vaccination. Or, as the writer on a smoking car a few weeks ago, listened to an animated discussion of appendicitis by four apparently good natured and intelligent travelling men, when much to the surprise they all agreed that no one ever entirely recovered from an operation for appendicitis, and that they would certainly be operated on only as a last resort and not as a mere means of gratification to the surgeon; forming their opinions and basing this astounding conclusion upon

the fact that two of their number had had friends to die within a year after being operated on.

In fact, on every side can be heard the absurd and inconsistent claims of a varied army of professing healers, and often are we called upon to witness with compassionate sympathy the abused trust of many a deluded follower.

In this day of universal effort to find and teach the truth naked of Mediaeval superstition or of modern fanaticism, and disrobed of that dangerous and deceptive cloak of false modesty which has too long been a potent means of infecting the veil of our civilization, it seems appropriate on this occasion to urge the necessity of teaching each succeeding class in public schools and colleges the causes and prevention of diseases, especially appropriate as we assemble in this beautiful auditorium of one of North Carolina's most progressive schools, made so by its president, one of the South's greatest educators and benefactors. For after all that has been said, is there any knowledge more important to mind, body and soul, aside from its vast economical phase, which appeals so strongly to our commercial age than a knowledge of the laws governing health and the prevention of disease?

The burden resting upon our profession to spread abroad this knowledge is granted without question, and becomes the chief duty and pleasure of its most loyal members. Yet, my friends, it is but fair that this great responsibility should be felt with equal weight by others, among whom are the public teachers, who are in the largest measure the guiding influence for good or evil in the State.

The unaided profession may cry from the house tops to all that pass by, and still in the far-distant future the highways of the world will be crowded with doubting Thomases working unceasingly to teach false doctrines, the very seeds of which were sown broadcast in a young mind by a much revered teacher.

Possibly nowhere else can preventive medicine be given a greater impetus than in our public schools, where for the first

time the boy or girl gets away from the faithful watchers of home and is fresh to take on to things new. There is the place and then is the time when, unbiased by prejudice, the young mind should be taught the causes and prevention of diseases that may fasten their deadly clutches upon them at any stage of an useful life. Impressions there made, unquestionably when true, will abide with them through all of the arguments to the contrary which they may encounter in after life. There can be taught that rather than one in ten dying as a result of vaccination, that an official report to the German Government a few years ago reported 2,485,483 vaccinations without a single death.

That notwithstanding tuberculosis has for nearly a quarter of a century been recognized as a communicable disease and distinctly preventable, the ghastly fact remains in our midst, told so graphically in the somber words of Osler: "In more than four hundred homes of this country there are lamentations and woe to-night:—husbands for their wives; wives for their husbands; parents for their children; children for their parents. A mere repetition of yesterday's calamities! and if the ears of our hearts are opened, you can hear, as I speak, the beating wings of the angels of death hastening to the four hundred appointed for to-morrow." That this appalling sacrifice of life is in a large part unnecessary; that it can be diminished; that there is hope for the poor consumptive: this represents a revulsion of feeling from an attitude of Oriental fatalism which is a triumph of modern medicine.

In our public schools the future husbands of innocent girls can be taught in the days of their youth the rewards of purity and the unutterable horrors of those foul diseases which a vile and cruel standard of morals, recognized by society, allows to go unchecked as an open sewer in our midst, until yearly hundreds of noble and pure young wives, through no fault of their own and not infrequently through ignorance of their sworn defenders in the marital vows, are reduced to hopeless invalidism and doomed prematurely to the grave.

Let us give the mothers and fathers of the next generation a sufficient knowledge of the social evil, the cause of such widespread sorrow, suffering and disease, probably second to no other cause, as to enable them better to warn and protect their innocent children from the gloomy fate of those poor sufferers who line the wards of hospitals with faces pinched and drawn, and who by days and nights of suffering are rendered unfit for the duties of that blessed state of motherhood.

When the manhood of our country knows of the cause and the train of sad sequalæ following such diseases, they will be found in the advance guard of a war against vice and crime against their helpless wives and innocent children; demanding as did the venerable prelate in the story when asked for the hand of his daughter in marriage by a man of wealth, family and influence,—"I know you can provide for her future needs,—can you protect her from the past?"

When these facts are known of all men, let us trust that forevermore there will be an end to a state of society which fails to say NO to a man who from a life of sinful debauchery aspires to enter our purest homes.

There can be taught the blackness of the crime, the most degraded crime against state, church, family and body,—"Racial Suicide." The very air of our larger towns and cities is chilled and laden with these murderous desires and intents, and often through ignorance such advice is given in a spirit of Christian charity and mercy, when in fact it reeks with disease and death.

Let us briefly consider other relations of the Physician and the Public. How often we hear, "I don't believe in doctors and their medicines." Now to teach or claim that the physician is always right, and in some providential way exempt from error and mistake, would be as false and treacherous as it would be to teach that nothing of a lasting or beneficial nature had been added to the store of medical knowledge within the last half century of brilliant research and marvelous advance, so that the dawn of each new year notes the

gradually ascending scale of the length of human life, which within that period statisticians tell us the duration of human life has been advanced from 28 and below to 41 years and above under the ordinary workings of sanitary laws and the phenominally reduced mortality in many diseases, both surgical and medical.

However attractive to the sick and suffering are the boasted powers of the Christian Scientists, the Osteopaths, the Divine Healers, and a nameless host of others, to relieve suffering and cure disease, there will always remain the unrefuted truth that there is but one profession of medicine. Yes, but one profession whose unselfish end it is to prevent as far as possible suffering and disease, and when unpreventable, to carry to the afflicted the relief that has been won and offered freely to all mankind by many of the world's greatest benefactors through lives of obscurity and self-sacrifice and years of patient study.

The fact that there has been of recent years such rapid and radical changes in the treatment of diseases,—that often the avowed and strongly supported methods of yesterday are questioned to-day,—seems strange and almost unreconcilable to some, whereas it only goes to prove that medicine is a progressive science, cautious, but ever ready to welcome the true reformer.

So great have been the changes that a few months ago a bewildered old man, startled by the liberal diet, quantity of pure water, fresh air, cold baths and few drugs given in a case of typhoid fever, remarked, "Doctor, they have certainly changed the treatment in fever. Why, when I was a boy they used to bleed them till they fainted, and then give calomel and jalap till they died."

It is of doubtful propriety that the laity should know too much of disease *per se*, for it is a hackneyed story of the medical student who was unable to pursue his course in medicine, as he imagined himself to be afflicted with every disease he read of, doubtlessly abandoning his studies with the popular

American disease—Nervous Prostration,—and so it might prove fatal to many.

Still it is of the greatest moment that each individual should have a larger and clearer knowledge of the causes and effects of diseases, and of the urgent necessity of consulting a physician in the beginning of ill-health and impaired normal functions, thereby gaining all of the benefits of an early diagnosis, the importance of which is being more and more realized by both physicians and surgeons; many of the failures of the present in the most common and closely studied diseases being directly and alone attributable to a late diagnosis, brought about either by ignorance on the part of the patient or careless indifference in the hands of the physician, whereby an almost incredibly short period of time may change a hopeful to a hopeless condition,—in such common diseases as tuberculosis, diphtheria, appendicitis, obstructive jaundice, and the like.

When the public conscience has been aroused to a due appreciation of these golden moments in the very beginning of disease, before the progress of destruction and impairment of vital functions have made the conditions unfavorable for the application of remedies, which at an earlier stage would have assured the patient of a speedy recovery, spared him probably from weeks of suffering and many dollars of the savings, which the very effort to accumulate and lay aside for the peace and comfort of old age was in so large a measure responsible for his beginning ill-health; then will be seen the first light of the dawn of the approaching day when the great masses of working men and women will realize how they have been imposed upon by every adventurous imposter who has been mean enough to widely advertise some patent medicine or nerve tonic as a means of enriching himself by taking the hard-earned pennies from the homes of the poor. In return for which he has flooded their homes with literature, often dangerous and obscene, to poison the minds of their children while he poisons their bodies with vile concoctions and robs them of every chance of recovery.

The bill for patent medicines and preparations of that class in this country amounts to between seventy and eighty millions of dollars annually, coming largely from the pockets of those who can ill afford it.

A few months ago I was called to see a poor girl who up until two days before had been working faithfully in a cotton mill through days of pain and fatigue in an honest attempt to support herself and aged mother, with no idea that she had far advanced consumption, and for six months had starved herself and spent $50.00 of her little savings in patent medicines recommended to her for indigestion. Seven weeks later as I looked upon her lifeless form and beheld the loneliness of her sorrowing mother, I wondered where could be found the reward of the man who furnished her those drugs.

Robbed of her petty earnings, thrown on the hands of charitable friends to be led to a bed of death; can you conceive of a greater crime against the children of men?

Many of these preparations, sold as harmless, are filled with opiates, cocaine, and the like dangerous drugs, with the premeditated purpose of getting recommendations from people of influence while under the first and transient effects of feeling better.

Let some of our temperance societies in connection with their righteous war against alcoholic drinks, sold under the requirements of the law, consider the evil of this great hidden source of drugging and drinking, and they will render all classes of people a far greater service.

Heads of families who would shudder in holy horror at the thought of knowingly administering alcohol in any form to a member of their household, not infrequently buy and advise others to buy preparations ranging from twenty to forty per cent by volume of alcohol; such as—

	Per Cent.
Lydia Pinkham's Vegetable Compound ...	20.61
Paine's Celery Compound	21.00
Ayer's Sarsaparilla	26.20
Peruna	28.59
Parker's Tonic, purely vegetable, recommended for inebriates	41.60
Hostetter's Stomach Bitters	44.30

which are but a few of the long list.

Lastly, what is the relation that should exist between the family and the physician?

There is a tendency in this unique age to specialize in every phase of life,—in literature and in business,—in music and in philosophy,—in law and in medicine,—and well that it is so, for only through specialists are the highest attainments made possible. Yet I share none of the morbid fear that either the specialists or the public will ever permit of the passing away of the family physician, upon whom the specialists must depend to get their cases in time, and the patients to be guided to the right specialists and surgeons.

With his knowledge of family histories and individual peculiarities; with a general knowledge of every organ in the body, and as a bedside observer in diseases, he becomes a specialist of specialists, the first and last court of human appeal,—for it is the family physician who is with you at your entrance into the world, warns you through life of approaching dangers, and finally soothes your pathway to the unavoidable end.

The Annual Debate—Topic: A Plea for a More Liberal Diet in Typhoid Fever.

BY E. T. DICKINSON, M.D., LEADER OF THE ANNUAL DEBATE, WILSON, N. C.

The diet in typhoid fever has been the most established point in its treatment. Whether this question is properly settled is yet to be determined both by theory and by practice.

I know of but one theory opposing liberal feeding. This regards the prevention of perforation, and has been handed down through generations as a religious principle and without question. But it will not stand the practical test, for the disease constantly stands third in mortality and counts its annual victims at fifty thousand in this country. Few or none of these deaths are caused directly by the disease, but by its three complications—perforation, hemorrhage and exhaustion.

Before the free introduction of water into the treatment of typhoid fever there was the additional complication and mortality of thirst and hyperpyrexia. Immediately upon the introduction of the free use of water in the treatment of this disease the mortality rate dropped fifty per cent, because this suddenly eliminated the grave complications of hyperpyrexia and thirst. If now it is possible to reduce or eliminate the remaining complications of perforation, hemorrhage and exhaustion an equivalent reduction in the present mortality is feasible.

It is generally agreed that the profession is not acquainted with any therapeutic measures that will abort or very materially shorten the course of the disease.

Husbanding the strength from the start by skillful nursing, the judicious use of water externally and internally, and the supervision of a wise medical attendant prepared to meet such indications as may arise, has materially modified the

course of the disease and lessened its mortality. Yet it stands third on the mortality list of the diseases in this country.

With this state of knowledge and high mortality science can not be satisfied, and must look further into the complications, since this disease kills through its complications and not by its inherent nature.

The restricted diet is a relic of the historic practice of depletion. The febrile state is often an indication for more rather than less nourishment, with selection as to digestibility rather than reduction in quantity. Suppurative fevers, for instance, whether of tubercular or other origin, we feed to the greatest limit. The stomach tube has verified the practical test that gastric digestion is not always weakened in the febrile state. This is especially true in typhoid fever, the power of digestion being much stronger than in our chronic febrile consumptives.

It is true that typhoid fever is a self-limited disease, and barring complications will subside before the course of chronic consumption and some other suppurative diseases are well begun. But the limit is often too long and the patient may die of exhaustion and want of natural alimentation before the limit expires.

When the restricted diet has for more than a few days been imposed upon a patient with typhoid fever, it then becomes dangerous to digress from it. This begets a deplorable dilemma, but it is one into which many fatal cases fall, the patient now being unable to live for so long a time without nourishment, and at the same time being disqualified for taking food. In a disease of such long course it is impossible to prevent accidents by putting the bowels to rest as if in splints. Lack of use of the muscular fibres of the intestinal walls cause stagnation and a state of paralysis. This paralytic and stagnant state in turn causes the intestinal walls to become inelastic and tender, aids decomposition and allows the distressing and dangerous accumulation of gasses. Be-

sides the discomfort to the patient, it adds the great danger of perforation through the ulcerated point of the much-stretched and thinned-out intestinal wall. Moreover, the lack of nutrition to these special tissues of the body has the same destructive effect upon their integrity, elasticity and normal function as does starvation on the muscular tissues generally. An intestine in which there are no resisting contents on which to contract must soon lose its habit of contraction, although it may have nutrition sufficient to give it all the necessary power. This is one of the many reasons for giving a diet that leaves some residue in the alimentary track after all process of absorption has taken effect.

That ulceration is caused by lack of nutrition is indicated from the well-known fact that typhoid fever is not a disease of the connective tissue of the intestine but entirely of the lymphatic system. Ulceration does not occur until the second and third weeks, and then probably in under-fed and under-nourished patients only.

Hemorrhage occurs in the disease not until the second and third weeks from sloughing of the Peyer's glands. This necrosis of tissue is most probably caused by the stagnant condition of the intestinal tract and the consequent increased infection of these glands. Besides being a factor in the production of sloughing and hemorrhage, non-nutrition and absence of the process of digestion render hemorrhage much more fatal. Physiologists have shown experimentally that there is a marked difference in the effects of hemorrhage in animals during digestion and fasting. Prolonged abstinence from food has a notable effect in diminishing the mass of blood, as indicated by the small quantity which can be removed, with impunity from the body, under this condition. Bernard drew from a rabbit weighing about two and a half pounds, during digestion, ten and one-half ounces of blood without producing death; while he found that the removal of one-half that quantity from an animal of the same size, while fasting, was fatal.

The direct effects of exhaustion in typhoid fever are multiple and enormous when induced by the two usual causes—lack of nutrition and high fever.

All of these are very much ameliorated or entirely averted by a full nutrition and liberal feeding.

The loss of appetite is the one condition to be overcome, and when replaced with an appetite approximating that of the normal convalescent we have established the key-stone that will be found indispensable throughout the course of the disease. At first it seems unreasonable to hope to create and maintain a normal appetite in typhoid fever, but persistence does this in nearly every instance within seven days from the beginning. It is best to begin this task with highly seasoned and concentrated broths and soups given only at the intervals of the regular meals to which the individual patient is accustomed, and then follow up quickly at the same intervals with those articles of diet that have formerly been his favorites. At this early stage the power of digestion should be the only restriction as to both quality and quantity of food. There is now no danger of either perforation or hemorrhage. The only danger to the patient is future exhaustion from persistent anorexia, which is sure to prevail if appetite be not cultivated at this stage.

The appetitie and digestion now being good, all the secretions are re-established and the dry tongue and the cracked lips of the second week do not appear. Meteorism is slight and seldomly developes, because the muscular coat of the intestinal walls retains its tenacity and power of normal contraction and expulsion. The temperature runs a uniformly low course, because the entire alimentary canal is constantly and normally being bathed in fresh and nutritious contents rather than foul and stagnant debris sloughing from the infected glands. A few cases of hyperpyrexia occur, but with the full limit of digestible food and nutrition these are fortified and lose but little of their reserve flesh and strength and maintain their mental equilibrium throughout the attack.

I have never seen a delirium or subsultus tendinum develop in a well-fed and well-nourished patient. I have seen no boils and abscesses, no diarrhœa and bed sores.

Treatment of typhoid fever on this plan has been entirely satisfactory to me and proportionately satisfactory to others as they have been willing to adopt the method in full or in part. I have treated in this way a few more than one hundred patients. About ten cases were selected from each consecutive year from 1895 to 1905, this number being all that came under my care presenting throughout clear typhoid symptoms. Not one of the number had any alarming complication with the single exception of one who had persistent hyperpyrexia. Nearly all were able during the entire course of the disease to sit upon the commode by the bed, which I think is a great factor in the prevention of perforation. Theoretically, nothing could be more conducive to perforation than the unnatural straining required to produce the guiser-like action of the bowels when the hips are elevated upon a bedpan.

In order to make more definite the course outlined above, I report from the chart the case of hyperpyrexia previously referred to. I give the list of diet and the corresponding dates and temperature. Treatment was begun by me only until the second week of the disease.

During the second week the lowest recorded temperature was 97.6 degrees, the highest 105.6 degrees, the average 104.1 degrees. The diet given throughout the week was chicken soup, eggnog, coffee, albumenized lemonade, buttered toast with tender boiled chicken, scraped beef, boiled fresh fish, scrambled eggs, fresh ripe peaches, ice cream and sherbet.

During the third week the lowest recorded temperature was 98.8 degrees, the highest 103.8 degrees, the average 101.6 degrees. The diet was toast, corn muffins, biscuit and butter, squab, tender boiled beef, young chicken, fresh boiled fish, rolled oats, coffee, sherbets of various kinds, fresh peaches, baked apple with cream, chipped ice and pineapple juice.

During the fourth week the lowest recorded temperature was 98 degrees, the highest 101 degrees, the average 99 degrees. After this time the temperature remained normal and the patient quickly regained his former health, notwithstanding his taking the most liberal diet served at his will from the family dining table.

At the end of this fourth week this patient was discharged from the institution and from treatment. He was then able to walk easily, with confidence in himself and without assistance of others and all artificial support.

After following up the plan of free feeding and noting the practical results, a few conclusions force themselves upon us.

Free feeding and typhoid fever are not incompatible, but almost any form of diet is dangerous after a very restricted regime combined for any considerable time with typhoid fever.

The restricted diet brings upon the patient unnecessary and great weakness, insures an unnatural and ravenous appetite during convalescence, and thereby places him in the greatest danger and at the same time takes away his power of resistance.

A liberal diet conserves the patient's energies and strength, and thereby averts the rampant and uncontrollable appetite so commonly experienced by convalescents.

Liberal feeding throughout the course of typhoid fever shortens its duration to the minimum and renders the convalescent stage almost nil.

Acute Catarrhal Dysentery.

DR. W. H. COBB, JR., GOLDSBORO, N. C.

The subject of my brief paper is a disease of such common occurrence in our latitude, that never a season passes but that we are called upon to treat many sufferers; and it occurred to me that while I had nothing original to offer, still we might study it in some of its phases with interest, and perhaps profit. The term Dysentery ("dus," difficult—"enteros," intestine) is such a comprehensive one, that I have thought it best to confine myself to a discussion of one of its subdivisions, viz., Acute Catarrhal Dysentery, and to limit my paper to the eitology and treatment, omitting the symptomotology, pathology, complications and sequelæ.

The best definition, perhaps, is that given by Hughes: "An acute inflammation of the mucous membrane of the large intestine, catarrhal in character, characterized by tormina, tenesmus and frequent small mucus and bloody stools." Its synonyms are, colitis, colonitis, ulcerative colitis and bloody flux.

It occurs sporadically and endemically, but more often in epidemics, and is considered one of the four great epidemic diseases of the world. It is the scourge of armies, frequently causing more deaths than shot and shell, and certainly more sickness and death than any other disease. It ranks in malignancy and mortality with yellow fever and small-pox, and in the tropics and semi-tropical regions, where it is very prevalent, causes more deaths than cholera.

Epidemics of dysentery have occurred in the United States for more than a century, and while they may occur in temperate regions, it is more prevalent in warm climates; but from "Greenland's icy mountains to Afric's sunny clime" it lays claim to its victims, and no climate or region is absolutely immune from its ravages.

It is one of the most ancient diseases of which we have any record, and has perhaps existed since the "fall of man," and while there is no Biblical account of any bowel trouble being the portion of Adam and Eve, who knows but that after eating the forbidden fruit herself and giving to her husband, that each may have suffered from intestinal trouble and colicky pains, along with the other sins of disobedience. What they did for relief we are not told, but perhaps they obtained some surcease from the application of their fig-leaf aprons.

Its etiology is interesting, and a study of its various causes both predisposing and exciting, is instructive. Beginning with the seasons, we find that heat is one of the predisposing factors, as shown by increased number of cases occurring during the late spring and summer months. It has been supposed that heat acts by producing injurious effects upon the alimentary tract, as increased excitability and disordered secretions; but it is probable that its effects are produced by aiding in the development of pathogenic organisms.

Age exerts no special influence, as it occurs at all ages, and is no respecter of persons, attacking the babe at its mother's breast or with equal force invading the citadel of old age and decrepitude.

Sex is supposed to exert an influence, in that males are more liable to contract the disease than females, because of their greater exposure to various causes, but if we omit the environment of the soldier in camp and on shipboard, and prison life, my experience and observation lead me to believe that the sexes, generally speaking, are equally susceptible.

Unhygienic conditions render those so situated more liable to its contraction, and especially is this observed in armies, fleets, camps and prisons. "Dysentery has followed the track of all the great armies which have traversed Europe during the continental wars of the past two hundred years."

Enfeebled constitutions, as are found in those suffering with tuberculosis, cancer, typhus fever and Bright's disease,

cause those so afflicted to be more susceptible to its development because of their lessened powers of resistance.

Constipation is by Virchow and others, especially the German authorities, regarded as a predisposing cause, and great stress is laid upon this condition as being a strong factor, which is no doubt true of a certain class of cases.

Malaria is a predisposing cause, as it has been shown by Aitken that in those countries where it prevails, dysentery is also prevalent.

Meteorological influences are also predisposing causes, and sudden changes in the temperature appear more harmful than variations in moisture. Hot days followed by cool nights being especially productive of dysentery.

Geological conditions are also largely responsible, as certain soil conditions predispose to dysentery by contamination of drinking water with organic matter, which renders the water a favorable medium for the development of diseases.

From the earliest ages impure drinking water has been considered an exciting cause of dysentery and bowel troubles generally. Hippocrates appreciated this fact and discussed it fully, and later Galen accepted his deductions and conclusions, and exerted his influence and efforts to the purifying of drinking water by filtration and boiling. One of the most conclusive instances of the water infection is told by Fagge in regard to dysentery in Millbank prison in England, where the disease had prevailed extensively for a long time. To quote his exact words: "In the year 1854 the prisoners ceased to be liable to dysentery, and during the next eighteen years (up to 1872) one death only occurred from that disease or from diarrhœa; indeed, so far as I am aware, the immunity has continued down to the present time. Now one and only one change in the hygienic arrangement has coincided in time with this improvement in the sanitary state of the prison. Formerly the water which the convicts drank was taken direct from the Thames as it ebbed and flowed beneath the walls. But on August 10, 1854, the artesian well in

Trafalgar Square was made the source of supply to the prison; this has since continued. The change was effected in the midst of the cholera epidemic; six days afterwards the disease suddenly ceased. * * * It is, I think, impossible to avoid the conclusion that the exciting cause of dysentery in Millbank prison was the Thames water, and in all probability the noxious ingredient was derived from the sewage contained in it."

According to Strumpell, dysentery is excited by infection with an organized pathogenic poison, which may be of specific infections or non-specific origin, about which as yet we have no absolutely irrefutable knowledge.

Dyspeptic conditions, caused by errors of diet, the ingestion of bad food, unripe fruit, unwholesome vegetables, tainted meats, canned fish are exciting causes which, generally speaking, should be prevented by more rigid attention to the selection of food, and its proper preparation.

It is just at this season in our eastern section of the State, that dysentery is most prevalent, and in a large degree I attribute the cause to be the ingestion of berries, peas, cabbage, beans, potatoes and early imperfect fruit and vegetables generally, which together with the cool nights, following the warm, bright days, gives us ideal opportunities for its development.

I will not discuss the possibility of the contagious character of dysentery, as that is a question still not fully decided.

Passing from the etiology, we come to the consideration of its treatment, which may be comprehended under the three heads—rest, medicines and diet. A patient suffering from acute catarrhal dysentery should be confined to bed.

Called to a case of acute catarrhal dysentery, my first effort is directed to the removal, if possible, of the offending cause, by cleansing the entire alimentary tract, and I am guided in my choice of agents by my patient's condition. If nausea is present with coated tongue, I find no evacuant and sedative so satisfactory as small doses of calomel, soda and

ipecac, followed by a saline, either Epsom or Rochelle salts. If the nausea persists, and patient rejects all medicine and food by mouth, and local applications fail to relieve, a resort to the hypodermic syringe will often prove very effective.

If there is absence of nausea and no indication of biliousness, the mecurial is omitted and a saline given at once. After the bowels have been cleansed, the next indication is the relief of the pain and to quiet peristalsis; these are best accomplished by the administration of some form of opium, and I confess to being partial to the deodorized tincture, which, combined with some one of the bismuth preparations, makes an excellent astringent and sedative. It is often my custom to give with these some of the digestive ferments, for in nearly all cases of acute catarrhal dysentery there is impairment of the digestive functions. Where the frequent discharges, with tenesmus and tormina continue, oftentimes relief is afforded the patient by irrigation of the colon with normal saline solution, for which I sometimes substitute warm boric acid enema; and in the later stages an injection of silver nitrate followed by saline irrigation may be used to great advantage. In those conditions in which it is impractical to introduce a rectal tube, excellent results may be obtained by elevating the hips and thus securing the benefits of high irrigation by gravity. I am not partial to irrigation with rectal tube, my preference being in favor of gravity enema, as I can not divest myself of the belief that an ulcerated surface is intensified frequently by the direct contact of a foreign body in the colon.

If the bloody stools continue with marked straining and irritation of rectum, the introduction once in 2, 4 or 6 hours, as occasion may require, of a cocoa-butter suppository, containing for an adult, morphia sulphate gr. 1-3, iodoform gr. 5, to which I sometimes add with good results, tannic acid gr. 5. I know that chemically and theoretically the addition of the last ingredient renders the prescription incompatible, but experience has taught me that we can not always rely upon or

defer to theories when confronted by conditions demanding action. Some rectums are so irritable as to refuse to admit of the presence of a suppository long enough for it to undergo solution, and in these cases I resort to the old-fashioned starch water and laudanum injections. If the rectal irritation is excessively severe the application of a 2 to 4 per cent solution of cocaine will be found very useful to us and grateful to the patient,—permitting the use of enema or suppository.

The preparations of bismuth most commonly used by me are the sub-nitrate, sub-gallate and resorbisnol. In adults I am partial to large doses of the sub-nitrate, while in children I find resorbisnol is a most excellent preparation, not requiring so large a dosage. I have made no mention of the vegetable astringents, catechu, krameria, hamamelis, gallic acid, etc., as I rarely use them, but they are considered by many authorities excellent aids in controlling the bowels.

For the abdominal tenderness, soreness and tympany, there are no local applications which surpass turpentine stupes or bran or hop poultices. Antiphlogistine is a candidate for honors in these conditions, and I sometimes use it, but its lauded and surpassing efficacy does not justify us in abolishing these time-honored and well-tried applications for so expensive a poultice. All stools should be disinfected before being emptied.

The fever, if temperature runs high, is best controlled by sponge baths of alcohol and tepid water. If there is a complication of malaria, the administration of quinine is not only beneficial but imperative. There is nothing better for the thirst than egg albumen and boiled water cooled with ice, to which may be added a few drops of the juice of lemon or orange.

The tympany sometimes becomes very distressing, and where the irritability of the rectum will admit of it, the introduction of a soft tube through which is injected high into the bowels an enema of soda water or one containing tincture of asafœtida, oftentimes is followed by expulsion of large

amounts of gas. If acetozone 5 gr. is added to a teacupful of boiled water, and the patient allowed to drink this in small quantities frequently, this will also be found very beneficial in overcoming tympany. Salol may be used in the early stages, combined with bismuth as an intestinal antiseptic.

It is always my custom to restrict my patient's diet rigidly, giving those articles of food easy of digestion, and which will make as little fecal matter as possible. Chicken broth, beef broth, and mutton broth are my preferences, in the order given, when animal foods are administered, and sometimes it is well to alternate these, lest the stomach wearies or revolts. Milk, an excellent article of diet, can not always be depended upon, but boiled with the addition of a little spice, or administered raw with lime water, to which may be added the white of an egg, makes an excellent food if the stomach digests it well; but if there is flatulency, and the appearance of curds in the stools, it should be promptly omitted. Egg albumen, ginger tea, to which is added the yolk of a fresh egg lightly beaten, and wine whey, are all excellent articles of diet. For nourishing my patients through the night, and in those cases where nothing can be taken but food predigested and ready for assimilation, I am accustomed to administer peptonoids, panapepton, or some of the beef and gluten preparations. Where there is need for stimulation, and this is often the case in my experience, especially in infants, the aged, and those enfeebled from the exhausting nature of the ailment, I find nothing better than strychnia, and a reliable preparation of distilled blackberry or French brandy.

"Gastro Enteritis."

BY JOHN T. BURRUS, M.D., HIGH POINT, N. C.

As we are now beginning the work of another summer fraught with all its changes and surroundings, we are reminded that we must deal with gastro enteritis face-to-face, and through the foaming billows of this fawning sea we are called on to engineer the little bark of many a sweet little infant or a child, and our conduct while caring for these little ones will many times distinguish us as safe captains through such a sea.

In discussing this subject I shall only speak of it as seen in infancy, and endeavor to present a practical paper in a practical way, on what we so commonly know as summer diarrhœa in infants. Many pictures are daily seen by the *Clinician* as we with steadfast determination go out day by day to discharge our duties. But there is nothing which I should demand closer attention than the little infant wrapped in the arms of this horrid malady. The picture to which I refer is one that has been seen by us all many times, and when once seen is to be feared, especially if the family history is bad and the child is being raised on artificial food. Many times I have seen children artificially fed from election, but the majority of them are from mothers with poorly developed mamas, and hence are artificially fed from necessity. Often the surroundings are very bad with seemingly no knowledge of sanity or hygiene. In getting the family history we find that many times these children are from parents that have syphilis, tuberculosis or scrofulitic tendencies, and in other words there is not the good breeding (if you will excuse the remark) which makes the child capable of resisting or throwing off disease.

Causes.—There are two ways in which we see gastro enteritis: First, that due to infection; second, that due to

nervous origin through the central nervous system (Dr. Zeb. Shipley).

Predisposing Causes.—Mal nutrition, unhygienic surroundings, age of child, and temperature.

Exciting Causes.—Improperly prepared food, irregularly administered, improper articles of food, prolonged exposure to heat, sudden change in the temperature, excitement and fatigue.

We may have this disease due to acute indigestion, and with the stomach in this disordered condition we find it an inviting field for pathogenic bacteria, which multiply very rapidly when the condition is favorable to their growth.

Symptoms.—Nothing has been seen by the physician that should appeal to us more than this familiar yet unsteady disease. There is a great variance of the symptoms, due to the amount of disease producing substance, and to the peculiar characteristics of the patient, therefore making the mode of onset very variable. The lesion in this form of summer diarrhœa is slight and the severity of the symptoms are due to the absorption of the ptomains. When the onset is gradual the symptoms may present very little to distinguish from acute indigestion. In the mild form we find the child restless at night, occasionally colicky sensations, and at first is very little noticed by the attendants until the fever begins; which comes on gradually with an increasing evening temperature, and even now the parents are led to believe that the baby is only teething and in due time all will be well. As the disease progresses the stools become more frequent, with greenish watery discharge and a very bad odor, containing particles of undigested food. If the dejects is examined with the microscope there is also seen epitheliol cells; the fever increases to 102 degrees or 103 degrees F., with an evening temperature of 104 or 105 F. The lips are dry and drawn, tongue of a heavy brown fur and the child very thirsty. The limbs become soft and flabby, the face is drawn with an anxious expression. Thirst is often very much pro-

nounced, and when you find the patient so very thirsty you will see an inability to retain anything on the stomach.

Second. In the more severe form you have persistent nausea and vomiting, frequent watery stools, exacebation before the evacuation, rapid emaciation, urine scanty and highly colored, very high fever—105 degrees F. or 106 degrees F.—marked anemia, muscles become soft and flabby. The lower limbs swollen and a sunken eyeball, only partly closed by a pale lid. In this form you may see the disease ushering itself in by convulsions, which leads me to expect an unfavorable termination.

Treatment.—Divided into three heads—(1) Hygienic, (2) Dietetic, and (3) Medicinal.

Hygienic.—It goes without saying that the child should have all the fresh air and sunshine available, it matters not how high the temperature or how great the anemia; an elegant way of giving the baby fresh air is to make their little bed in the hammock or carriage and place it on the piazza. Clothing should be loose but of sufficient weight to keep the child warm. If the child has been sent away to the mountains or sea-shore it will be necessary to clothe heavier, some advise flannel. The bathing is of great moment and should be carefully administered. Every morning child should have its bath in tub of water at 100 degrees F., and gradually reduced to a temperature of 75 or 80 degrees F., and while in the bath should be thoroughly rubbed. This always soothes restlessness, and the child is seen to fall into refreshing sleep. If the temperature is very high, I repeat this bath in the evening. The genitals and buttox should be well cleaned, and as often as the napkin is soiled it should be removed and put into a solution containing boracic acid or bi-chloride and the parts thoroughly dried and a clean napkin applied. It may be necessary to give the child a change of surroundings, and get the refreshing and invigorating air of the seashore or the mountains, but many times our patients

are unable to do this, so we administer the best which the surroundings afford.

Dietetic Treatment.—Our first direction is to stop feeding until the most exciting stage is passed, with the positive injunction that nothing must be given the child for at least 24 to 48 hours. If the child is nursing its mother, this direction must be as positively given as if the child was being artificially fed. The breast should be withheld for 24 hours, or until all vomiting ceases and the stools less frequent. After vomiting has ceased for 12 hours, then the child may have the breast for two minutes every four hours. If there is no tendency to excite the symptoms, then the quantity of nourishment may be increased, but if there is a tendency to nausea or the stool becomes more frequent, then the breast should be withheld for 12 to 24 hours longer with absolutely nothing on the stomach. For the thirst I administer high salt enemas, which removes the mucus and allays restlessness. After the first 24 to 36 hours, I administer 1 oz. of albumin rice or barley water every 4 hours; if this is borne well, I increase the quantity and give it oftener. If there is extreme prostration, add to the albumin or barley water stimulants, such as brandy or rye whiskey. If this is well taken, I allow animal broths, which are very nourishing. Next liq. peptonoid may be given every four hours, well diluted, and as the fever subsides the vomiting ceases, the stools less frequent and convalescence well established, then the child may be allowed to nurse the mother for nourishment, but there should be certain hours and a specified length of time to allow the child to nurse. In the event the child does not receive its nourishment from the mother and a wet nurse can not be secured, we naturally turn to cow's milk as our last resort, and no more important subject has ever come to us. When milk is begun with the casein and fats must be very greatly diluted and in many instances the casein predigested. Holt's formula for feeding a ten-months-old child is: Fat 45 per cent, sugar 4 per cent proteids 50 per cent.

It is one of the most important parts of the treatment, and therefore should be thoroughly emphasized. In leaving a direction for feeding, it should be always written with the articles of food, the quantity and the hours specified. The direction which I usually leave and the manner they are left are as follows:

First visit: First 24 hours absolutely nothing on the stomach.

Second visit: 48 hours. Give 2 dr. of albumin, rice, or barley water on ice.

Third visit: 72 hours. To 1 pt. of albumin water add 2 dr. cream, add 2 dr. sugar, small quantity animal broth, and direct 4 oz. every 3 hours.

Fourth visit: 96 hours. I leave the following formula: Milk 2 oz., sugar 2 dr., cream 2 dr., lime water 2 dr., sterile water 4 oz.; Sig., allow this at one feeding every four hours.

Medical Treatment.—If treatment is instituted at the beginning of an attack there is very little trouble to control the condition. But if let alone for a few days, then it becomes a very difficult thing to treat. It matters not to what extent or in what form the disease is manifesting itself, the first thing to be done is to thoroughly cleanse the alimentary tract and keep it clean. When the disease is ushered in by the nausea and vomiting, the stomach should be thoroughly washed with sterile water, and use one quart to one-half gallon through a stomach tube. This clears the stomach of any foodstuff or mucus that may be there, and it puts the stomach at rest. In the majority of my cases when the stomach tube and water was used freely there was very little trouble in controlling the nausea and vomiting, the temperature was reduced and the patient had the general expression of comfort and well-being. After this we should now endeavor to empty the intestinal tract. For this I order 1-8 gr. dose of calomel every two hours until one or two grains are given, then I administer a large dose of castor oil and after four hours give a high enema of normal salt water and leave directions

for a high rectal enema twice a day, using 1 quart of normal salt water at a time. I now administer phos-sodium in combination with aromatic syrup rhubarb. This is well borne and has served me well. If there is acid fermentation with distention of bowels and eructation, the alkalies are of much value. Bi C. soda in 1 gr. dose every 3 to 4 hours; lime water or a chalk mixture may be seen to do much good. I do not use intestinal astringents, for I am sure I have never derived any good from their use, and in a number of cases I have seen them do much harm. I am of the opinion that there are many little mounds in the church-yards to-day due to the use of opiates and other intestinal astringents.

Therefore I never give opium in any form by the mouth. When we see a case early in the disease, where there is great restlessness and where there is so much cramping, I adminis- 1-80 to 1-100 gr. doses of morphine sulphate hypodermically—but I prefer never to use it at all. "Never use a drug or a combination of drugs if the stomach is disturbed by so doing." For the restlessness, monobro of camphor acts well, given in very small doses and often repeated. For the fever, cold water sponges or cold packs if the fever is very high will give much relief. After removing the child from a cold bath it should be wrapped in flannel and kept quiet for several hours.

After the acute symptoms have subsided, I frequently administer some form of stimulant. Brandy or whiskey well diluted has given good results in my hands. I administer them in small quantities and not oftener than every four hours. If there is extreme prostration and rapid waste of tissue, I administer a subcutaneous injection of normal salt water, and give adrenalin chlor, hypodermically, mustard packs or hot baths. During convalescence there is only one thing to be done, and that is, nourish the child. In this stage cod-liver oil in an emulsion is beneficial if the stomach can tolerate it. I have never derived any benefit from bismuth or pepsin in this condition, therefore I have discarded their use.

Report of Cases.—Case No. 1. M. E. D., child ten months old, white, family history good, nursed by mother, was taken ill June 20, 1904. Vomiting and frequent watery stools, very restless and tossing itself from side to side; frequently there was a cry as though it was in intense pain. Child restless and with a pale face, would vomit everything given it. Fever was 103 deg. F., and a very quick pulse. I introduced a stomach tube and washed the stomach very thoroughly with sterile water; following this, I ordered 6 doses containing $\frac{1}{4}$ gr. calomel, 6 gr. sugar of milk, and 6 gr. phos. sodi, and directed one powder every two hours until all was given, which was well borne. Four hours after giving the last powder I directed 2 teaspoonfuls of castor oil. I left a positive direction that the child should not be allowed to nurse or have any kind of food on the stomach until I returned. On the following morning I returned and found the temperature much reduced, pulse easy and less frequent, child resting well and had not vomited a single time after the stomach was washed. I now washed out the lower bowels with sterile water containing salt and glyco thymoline, with a long rectal tube. I withheld food all the day, and at the expiration of 36 hours from my first visit I admitted 1 tablespoonful of rice water every 3 hours. I gradually increased the quantity at each time until I added to the rice water a small quantity of milk, cream and sugar. This was well borne. At my next visit I put the child on phos. sodie 16 grs, cret prep. 16 grs., spr. minth pep. 6 drops, listerine $\frac{1}{2}$ dr., aqua to make a 2-oz. mixture. Sig—1 dr. in water every three hours.

After 48 hours I ordered the following given warm every three hours: Milk 1 oz., lime water 1 dr., cream 1 dr., sugar 1 dr., water (sterile) 4 oz. The child made an uneventful recovery.

The case beginning very severe, I report it to show that if proper treatment can be instituted at the beginning of an attack we invariably *get good results.*

Authors quoted: Holt, Shipley, Star, Wescott and Smith.

The Dwarf Tapeworm (Hymenolepsis Nana), a Newly Recognized Parasite—Report of Case.

BY HENRY F. LONG, M.D., STATESVILLE, N. C.

Hippocrates, the first of the great clinicians and masters of diagnosis, laid down the aphorism: "Experience is fallacious and judgment difficult." In the (to me) interesting case I have the honor to call your attention, the truth of this aphorism is most aptly proven.

About one year ago Clara . . ., female, age 12 years came under my care. Patient was a pale, slender, nervous anæmic girl, exhibiting marked symptoms of Sydenham's chorea, or St. Vitus's dance. I prescribed arsenic, with other tonic treatment. Some months later she came under my notice again. The general condition showed no improvement, the nervous symptoms were still in evidence and the anæmia still pronounced. The immediate cause of this visit was to relieve a severe colic. She complained of severe pain in right iliac region, McBurney's point being very painful on pressure. Pulse 120 per minute; temperature 101½ F.; no constipation; no marked rigidity of right rectus muscle; no leucocytosis. Spts. Aeth. Comp. one drachm, repeated in an hour, relieved her of pain, but her temperature remained at 99 3-5 F., and so continued to show each afternoon for three weeks. The muscular contractions did not recur, but there remained decided tenderness on deep pressure over McBurney's point. There was gradual improvement in the general condition for two months, at the end of which time she suffered a second seizure of the abdominal symptoms. This yielded to treatment only to give place to third and, later, a fourth attack, all with similar abdominal symptoms. The fourth attack, the most severe of all, was followed by an epilepti form convulsion. Although I could not demonstrate all the classical symptoms of appendicular colic, I decided that the recurrence of the attacks, coupled with the symptoms

outlined, fully justified a diagnosis of appendicitis. I gave this diagnosis and advised an operation, which was consented to by the parents of the patient. Preparatory to the operation the urine was examined with negative results.

By reason of the fact that the case was an obscure one, there being a paucity of definite, decisive symptoms, I decided to have the feces examined microscopically. My friend, Dr. F. L. Sharpe, made the first examination and found what he was certain were tapeworm eggs. I made a number of examinations, but could not determine whether the specimens were tapeworm or hook-worm eggs. A specimen was sent to my friend, Dr. H. C. Cowles, a bright young North Carolinian, now practicing medicine in New York City, with the request that he examine, and if at all in doubt to have the best man he knew of to examine, and if possible classify the eggs. In reply, Dr. Cowles said "that he had examined the specimens, but being unable to determine the species of eggs, referred the problem to Professor Bastido, who was unable to classify the eggs, but was inclined to think they were hook-worm eggs. Was certain they were not tape-worm eggs." At no time did any specimen of feces show any tapeworm segements. The only foreign body found under the microscope being the aforementioned eggs. A specimen of feces was sent to Dr. Charles Wardell Stiles, of the Public Health and Marine Hospital Service, at Washington, D. C., who made an examination and sent me the following report of the results of his examination:

"Sir:—The specimen mentioned in your letter of March 30th has been duly received. An examination shows it to be a light infection with the dwarf tape worm, Hymenolepsis nana. I enclose herewith reprint of a short discussion on this parasite. You will find a more detailed discussion in Bulletin, No. 18, Hygienic Labratory, U. S. Public Health and Marine Hospital Service. Application for this bulletin should be made to the Surgeon-General of the Service.

Respectfully,

Ch. Wardell Stiles,
Chief of Division of Zoology.

As a result of these examinations, I gave the patient the following treatment: All food interdicted and only water allowed for twenty-four hours; then exhibited an oil purge; following this I gave one drachm of oleo resin of male fern, repeated in one hour, followed by an oil purge. After the administration of this treatment, the eggs disappeared, and although the feces were examined twice a week, showed negative results until three weeks had elapsed, at which time they again appeared in the feces. The same treatment was administered, and the eggs again disappeared. Another specimen was sent to Dr. Stiles, and the following reply was made by him:

"SIR:—I am in receipt of your letter of May 5th, and also the fresh specimen. Ten preparations of the specimen have been very carefully examined and no eggs were found. I am inclined to think that your three treatments, which you mention, have been followed by good results. It is not surprising that the tape worms were not found in the stools, especially if you did not examine them personally. The dwarf tapeworm, you will recall, is very small, and is somewhat difficult to find.

Cases of this kind are sometimes practically cured, but the eggs appear again in the stools after several weeks. This is possible because at the time of treatment some of the larval stages of the tapeworm may be in the villi of the intestine. They, of course, would not be expelled by the drug, and then upon reaching the lumen of the intestine they would develop in the adult form and thus produce eggs. There is no question whatever regarding the original diagnosis, as it was made by three separate men, Dr. Goldberger, Mr. Garrison and myself, so I think that the whole trouble is that your treatment was successful, and that the worms escaped unnoticed. I shall be pleased to examine further specimens in case you care to send them to me. If you happen to have any severe cases of hookworm disease on hand, would it be possible for you to obtain some fresh feces for me, as I wish some for experimental purposes.

Assuring you of my highest esteem, I remain,

CH. WARDELL STILES,
Chief of Division of Zoology.

At the present time the patient has gained many pounds in weight, the anaemia has disappeared. She has regained her color, the nervous symptoms have disappeared and menstra-

tion, which had never before appeared, has been well established. In fact, a return of perfect health had been accomplished. The cause of the pain and suffering and ill-health of the little patient, the dwarf tapeworm, or Hymenolesis nana, was described in France in 1845 as a parasite in the brown rat. Since the early observations it has been shown that the dwarf tapeworm occurs either in man or in rodents or in both. About 100 cases in man have thus far been recorded, most of the patients being males and the large majority children, commonly between the ages of five and ten years. In his report on the dwarf tapeworm, Dr. Stiles says that "since September, 1902, my division of the Hygienic Laboratory has examined about 3,500 patients for intestinal parasites, and we have found the dwarf tapeworm sixteen times, while the beef measle tapeworm, Taenia of Talina Saginata, which is the common tapeworm of our pathological collections, has been found but twice, and we have not had a single case of Taenia of Talina Solium, which, according to many authorities, is the most common tapeworm of man in this country."

Dr. Stiles further says that the regular channels through which man becomes infected by this parasite have not been established through direct observation, but are deduced from certain general facts. It seems probable that rodents, especially rats and mice, are the regular hosts for this worm, and it is known that in certain habitations rats and mice visit the pantries and food, as for instance, bread. Such visitation is especially likely to occur in houses of poor construction. By this means the eggs of the tapeworm may be spread to the food through the droppings of the mice and rats, and infect man.

The dwarf tapeworm inhabits the ileum, and there may be a single parasite or several thousand specimens present in a patient. The symptoms produced by the dwarf tapeworm are usually slight, but severe symptoms, such as persistent diarrhœa, epileptiform attacks, severe nervous symptoms, and even convulsions may be produced.

The dwarf tapeworm, as its name indicates, is a mere Tom Thumb compared with the other varieties of tapeworm. It measures from one-fifth to slightly less than two inches in length. It has four suckers on the head and the genital pores are lateral. The head has a crown of hooks which are single, those of other forms of tapeworm being double. Being very delicate and likely to be broken in pieces, it is a difficult matter to discover specimens in the feces, unless passed in large numbers.

The mode of development of the tapeworm is, briefly, as follows: The eggs, containing six-hooked embryos, pass out of the body of the definitive host in the feces. To develop further they must be taken into the alimentary canal of some other animal. If conditions are suitable in this animal the embryos, after hatching, bore out of the alimentary canal, and encysted somewhere in the tissues of the body, develop into the intermediate or cysticercoid stage. When this animal, the intermediate host, is eaten by an animal which can act as a definitive host, the intermediate stage continues its development and becomes transformed into the adult worm, which produces eggs, thus completing the cycle. As one would expect, the normal intermediate host is an animal which is the natural food of the definitive host, or otherwise likely to be taken into the alimentary canal of the latter. The meal worm and similar insects are supposed to act as the intermediate hosts in the development of the parasite. Experiments along this line have resulted in a demonstration of the fact that the eggs of the dwarf tapeworm from one rat when fed to another develop into mature worms in the intestine. The rat was thus shown to act not only as the definitive host, but also as the intermediate host, and it is not beside the facts to believe that man may also act as host in a similar way, and complete the cycle in his own alimentary canal.

To make the microscopic examination it is necessary simply to rub up with a drop of distilled water on a glass slide, a very small particle of the feces to be examined, cover with a

cover glass, and examine with a moderately hig power. Some care is requisite in looking for the eggs of the Hymenolepsis nana, because of their great transparency.

Male fern is the only remedy which has met with any degree of success in the treatment of the dwarf tapeworm, the preparation to be employed in the official oleo-resin (Oleresina aspidii, U. S. P.) or the ethereal extract of the European pharmacy, which must be fresh to be effective. Care should be taken to have the patient in the best possible physical condition, and preceding the administration of the taeniacide by a preparatory treatment of mild laxatives and a light diet in which the amount of starchy food is reduced to a minimum.

After the preliminary treatment the male fern is given in the morning upon an empty stomach. A number of small doses at intervals may be given, or one, two or three larger doses, the latter procedure being preferable. One treatment does not always suffice, and repetitions at intervals of about fifteen days will often be found necessary.

As to prophylaxis, Blanchard epitomizes the subject of prophylaxis in the following words:

"From whatever point of view examined, the great problem of the suppression of parasitic diseases, whether they be infectious or not, is summed up in this formula: Cleanliness, always cleanliness."

As far as possible banish rats and mice from the premises, and keep food out of their reach, especially food that is eaten raw, or after cooking is kept for some time before being eaten.

From the experience gained in the foregoing, it is borne in upon one that every case should be treated upon its own merits, and a seeming preponderance of evidence should be thoroughly sifted, no diagnostic measures should be neglected, and all tests, especially the highly satisfactory evidence of the microscope should be applied in every case. A series of cases should not be allowed to influence the judgment, or prejudice to a hasty diagnosis, because some of the symptoms seem to

be characteristic. The absence of several clinical symptoms, no matter how seemingly clear those found, should put one on his guard, and every test should be applied. The services of the microscope, that powerful, tireless assistant, that sure and certain aid to diagnosis, which never speaks in uncertain or obscure terms, should be constantly consulted, even though only for confirmation; for occasionally it does not confirm, but points indisputably to the obscure but real trouble, and, in cases where such is possible, to the road which intelligently followed, leads the patient and physician out of the quagmire of disease on the high lands of health and happiness.

Importance of Exact Diagnosis in Diseases of the Stomach.

BY CHAS. W. MOSELEY, M.D., NORTH WILKESBORO, N. C

I have selected this subject, hoping that I might stimulate investigation in this important branch of internal medicine.

In the limits of this paper I shall not attempt to go into details in regard to the technique of the various analyses proposed by different authors, nor enter into a discussion of the relative merits of different methods of examination.

The text-books of Ewald, Einhorn and Riigel will furnish sufficient discussion and direction along these lines. I do not propose to attempt a learned and elaborate dissertation on diseases of the stomach, but to intimate in a very informal way some of the advantages that may accrue to the internist and the diagnostician by utilizing modern methods of investigation. It is a self-evident proposition that diagnosis, when possible, should precede direction for treatment and should form the basis upon which to make a prognosis. A thorough knowledge of the various functions of the stomach, and the relative digestibility of the different foods were not well understood nor thoroughly investigated until Beaumont made his elaborate and careful observations on St. Martin. Since that time a host of observers and investigators have been working out and perfecting a system of diagnosis and treatment, that is at the same time accurate, rational and scientific.

There is no department of internal medicine in which more rapid strides have been made and none in which the progress has been on more rational and scientific lines.

The functions of the stomach are threefold. First, the secretory function; second, the motor function; third, the absorptive function.

Either one or all three of these functions may be impaired at the same time, or there may be certain mechanical obstructions, either intrinsic or extrinsic, either benign or malignant.

We should also be able to recognize gastroptosis and other displacements of the digestive organs and the various neuroses of the stomach. In this difficult task of discrimination, it is important that we should know the secretory, motor and absorptive powers of the stomach, and not only these, but every method of gaining information should be exhausted before we reach a conclusion, and after having made a careful and accurate diagnosis, we can prescribe rational therapeutics and a rational regimen.

When are examinations of the gastric contents necessary? They may be omitted whenever we are able to arrive at a positive diagnosis without them, and in all acute conditions. They are not necessary in chronic conditions which are improving, and in a majority of purely nervous affections. In cases where ulcer is suspected the tube must be used with caution, and if there has been hemorrhage, the tube is positively contraindicated. Cases pointing to a certain secretory disorder (as hyperchlorhydria, gastro succorrhœa continua, periodia or chronica), may be first treated without a verifying examination of the gastric contents, but if this treatment prove unsuccessful, an examination of the gastric contents should be made.

Examinations of the gastric contents should be made in all chronic affections of the stomach with doubtful diagnosis that show but slight evidence of improvement.

These examinations may help us to recognize the following conditions:

*1st. Chronic Gastric Catarrh: Acidity diminished, the ferments present, free hydrochloric acid variable mucus present in large number of cases.

2d. Achylia Gastrica: Total absence of gastric juice, no hydrochloric acid, no ferments, total acidity low, almost neutral.

3d. Cancer of Stomach: In many instances incipient cancer of the stomach may be recognized by the constant presence of the following symptoms: Free hydrochloric acid

*See Einhorn on Diseases of the Stomach.

absent, lactic acid present, acidity not especially low, sometimes increased, mucus, sometimes small amounts of blackish-looking blood and stagnant food.

4th. Hyperchlorhydria: Free hydrochloric acid present, acidity between 70 and 140.

5th. Gastro succorrhœa continua chronica: Presence of about 60 to 140 cc. of clear gastric juice in the fasting condition.

6th. Erosions of the stomach: Presence of a few small pieces of the gastric mucus in the wash water of the stomach in the fasting condition.

7th. Ischo chymia: Presence of food in the stomach in the fasting condition.

The results of examinations of the stomach contents are useful to aid us in diagnosis, but are not to be depended on to the exclusion of other clinical methods. We should combine all the data at hand before arriving at a conclusion. In this way, they will be of considerable help to us.

The motor functions of the stomach may be tested in various ways. I will call attention to Leube's method, which is the oldest method. It consists in washing out the stomach six or seven hours after a large meal. Normally, the stomach is found empty at that time. When large quantities of food remain, it shows that the motor function is retarded. Washing out the stomach two or three hours after a smaller meal like Ewald's test breakfast may serve the same purpose, for normally the stomach is then found empty. The second method I will mention is examination of the stomach in the fasting condition. The best and easiest way to test the motor function of the stomach is to examine this organ by means of the tube and lavage in the morning in the fasting condition after the ingestion of a substantial supper the night before. It will be seen from the above that there is no difficulty presented in testing the motor function of the stomach.

The use of the stomach tube is also useful in helping us to differentiate between dilatation and stagnation due to simple

atony of the stomach wall and dilatation due to stenosis of the pylorus.

Several hours after a meal in dilatation due to stenosis you would find, on aspiration, the fluids mostly escaped from the stomach and the food remaining would not be freely mixed with fluids, but in dilatation due to simple atony you would find a large quantity of fluids mixed with the food, owing to the weak expulsive force of the stomach walls. While the use of the tube is not imperative in the neuroses of the stomach, yet it often helps us, at least negatively, in establishing a diagnosis.

If after repeated examinations we are able to exclude any serious organic or functional disease, if we find the secretion of hydrochloric acid variable, and if the other clinical symptoms corroborate these findings, we may reasonably conclude that we are dealing with a neurosis. In suspected gastroptosis we have as an aid to diagnosis, inspection, inflation with air, inflation with gas, Kemp's stomach whistle and Einhorn's gastro diaphane. I have purposely avoided giving details in regard to examination of the secretory and absorptive functions of the stomach; the first is rather too lengthy for the limits of my paper, and the second is of minor importance.

After presenting to you in a general way some of the helps to accurate diagnosis, I desire to report a few cases showing the value of at least being reasonably certain in our estimate of the patient's condition.

Mr. A. was seen in one of the clinics of New York City three or four years ago. He was from Scotland, and had been suffering from some form of stomach trouble for years. He had gone the rounds of the physicians of his acquaintance and had consulted a number of men of more or less distinction, being told that he had a severe case of indigestion. He had been given tonics, stomachics, laxatives, etc., ad nauseum, without getting any decided results. In fact, he seemed to be in the same condition as the woman who had the issue of blood mentioned in the Scriptures, of whom it was said:

"She had suffered many things of many physicians and had spent all that she had and was nothing bettered, but rather grew worse."

The gentleman had lost his position as teacher in one of the colleges of his native land and had come to America discouraged and despondent. In this condition he presented himself at the clinic, and an assistant decided to do what had not been done, to make a thorough repeated examination of the stomach contents after a test breakfast.

It was found on the first and each subsequent examination that there was a total absence of hydrochloric acid either free or combined. There was no pepsin, no rennet, or rennet symogen, in other words, he had a typical case of achylia gastrica, in which the power of digestion in the stomach had been completely and permanently lost, and the solution of the case hinged on giving the patient the proper diet and keeping the bowels in the proper condition and improving the motor function of the stomach. All the medicines he had before taken in the vain attempt to stimulate his digestive powers had rarely benefited him, often proving positively injurious. The treatment consisted in the prohibition of meats and coarse vegetables. Starchy foods were allowed to predominate and he was allowed some fat in the form of fresh butter, cream, etc., and a reasonable quantity of vegetable proteids. Special emphasis was placed on the improvement of the motor powers of the stomach and a systematic course of electricity and lavage was given. As it is a well-known fact that if the motor powers of the stomach remain unimpaired, the bowels will vicariously take up the work of the stomach within certain limitations.

The patient referred to stated that so long as he voided meats and certain of the prohibited vegetables that, he was comparatively happy and practically free from inconvenience, but that if he disregarded his instructions and ate meats and other forbidden foods which are normally digested largely in the stomach, he suffered considerable inconvenience. I know

that the above case is an unusual one and such cases are comparatively rare, yet many such cases, no doubt, have gone from bad to worse and have suffered many things at the hands of physicians because a proper diagnosis had not been made. It is worse than useless to treat such a case with the various stock prescriptions for indigestion.

I would not have you think that all cases of stomach trouble present difficulties in diagnosis. I would not have you believe that all cases require aspiration and examination of stomach contents. I do believe that all should be able to make such examinations when necessary, and thus be in a position to intelligently treat his patient and give proper directions as to diet and mode of life.

Case 2.—Mr. C., aged 50 years, consulted me last summer, complaining of a sense of fullness in the epigastrium. An intense burning in the stomach nearly all the time; patient seems to have eaten the ordinary foods in reasonable quantities, yet he did not experience hunger. The urine was very scanty and high colored, and patient wore a very anxious expression and was very desirous of obtaining relief, as he said life was almost a burden. He had given up his ordinary pursuits. Constipation pronounced. When seen at 12 m., the patient had taken breakfast at 6 a.m. and had driven twelve miles to my office. He stated that he had taken nothing since breakfast, not even a drink of water. Examination revealed the following inspection: The region of the stomach seemed very full and rather sharply outlined. Percussion, revealed the splashing sound very distinctly two inches below the umbilicus. On aspiration, I obtained a large amount of fluid (possibly one and one-half pints), mixed with food, which on standing separated into three layers. In the bottom, fine particles of food, in the middle an amber-colored liquid, and on top a dark-looking, foul-smelling, decomposed, fermented mass of retention products.

Chemical examinations revealed acidity very high, free hydrochloric acid in excess, digestion of starches much re-

tarded. On these findings, a diagnosis of dilatation due to simple atony of the stomach wall with hypersecretion an hyperchlorhydria was made. The treatment consisted in the proper regulation of the diet, liquid foods in reasonable quantities, as soups, milk, etc. Buttered toast was ordered, and white meats in small quantities were allowed at the regular meals, and toast with a glass of milk between meals. The patient was instructed to masticate very thoroughly and take rather small meals, but to take five meals per day as I have indicated. All red meats and coarse vegetables and vegetables containing seeds were prohibited.

The medicinal treatment was:

F. E. Condurango, Oz.1$\frac{3}{4}$.
Tr. Belladona, Drch.ii.

M. and Sig.: Thirty drops in water half hour before the regular meals with large doses of bismuth sub-nitrate.

Powd. rhei.
Bicarb. Soda.
Magnesia Usta, aa Oz.iv.

M. and Sig.: One-half teaspoonful one or two hours after meals. The improvement was continuous and noticeable from the first and the patient remained comfortable as long as he was under my observation.

I feel sure that if the patient should resume his former diet of fried meats and large amounts of pork and coarse vegetables that there would be a return of the symptoms, and that the patient would be forced to seek relief again. I would state in passing that I do not keep up the diet list indefinitely, but the patient is allowed to resume his ordinary food within certain limits after the improvement is pronounced.

In the above case, had I had the opportunity, I should have used lavage and intragastric electricity.

There are many other conditions of the stomach which may be easily recognized by the data that may be gathered from a careful and painstaking examination.

The scope of this paper does not admit of a detailed dis-

cussion of them all, but I shall be repaid if I have brought out anything to stimulate the general practitioner, or help him in his work along the line of a more thorough investigation of a class of diseases so often relegated to the charlatan.

It is not my purpose to unduly magnify the importance of diseases of the stomach, much less to claim that they are always amenable to treatment, but to try to clear up some of the misconceptions that have gathered around the subject, and I hope and predict that in the near future that the general profession will be as conversant with the improved methods of examination of diseases of the stomach as they are in the other departments of clinical medicine.

They do not require expensive apparatus, the technique is not intricate or difficult, the results are usually encouraging, and the field inviting.

Pneumonia from a Personal View Point.

BY J. B. WRIGHT, M.D., GRANITE FALLS, N. C.

ETIOLOGY.

Pneumonia is an acute inflammatory infectious disease of the lung—due to some specific microbe. The Diplococcus Pneumoniæ is the name of the germ holding first place among bacteriologists. I am no bacteriologist, so shall not attempt to discuss the name, size or shape of the microbe causing the disease. But from my limited experience I do know it is due to something more than exposure to cold or to overwork and debilitating conditions of various kinds. There is bound to be an exciting cause, and this is a microbe.

During the severe cold weather we had last January and February there was not a single case of pneumonia in my practice. But after the sleet and snow had melted and the weather was warm and pleasant there was an epidemic of colds in my town, and several cases of pneumonia followed. This was conclusive proof to me that exposure to cold did not cause pneumonia per se. I could relate instance after instance of exposure for a long time to severe cold, with overwork, and yet no pneumonia; and on the other hand I can give instance after instance of severe attacks of pneumonia where patients had not been exposed and were not subject to any of the predisposing causes—such as overwork of mind or body, dampness, cold, etc. The real cause is a germ, and I am satisfied there is no other cause. It is true pneumonia occurs during the cold half of the year, and the same is true of small-pox, yet cold has nothing to do with that disease; and it is also true of diptheria, and yet cold has no part to play with the cause of diptheria. And we have a majority of our cases of typhoid fever during the warm half of the year, and yet heat has nothing to do with the cause of typhoid fever. I believe pneumonia is caused by a specific germ as much so as I do that diphtheria or smallpox or typhoid fever

is, and I believe a correct history will prove me out correct in my assertion. We have the same predisposing causes for pneumonia that we have for any other germ disease, namely, emplanting the germ in its selected soil and rendering the soil fertile for the germ's growth by lessening resisting power. I do not mean by the above that lessening the resisting power is the same in all germ diseases; for instance, a derangement of the stomach and bowels would have more weight in lessening the resistance to the bacillus of Eberth than it would to the diplococcus pneumoniæ; and on the other hand la grippe would lessen resistance more for the diphlococcus pneumoniæ than for the bacillus of Eberth. Bacteriologsists have found the diplicoccus pneumoniæ in the salivae, larynx, pharynx, eustachean tubes, blood, kidneys and spleen. So we find this little fellow almost all through the human body. But it seems that it never gets active until it reaches the parenchymal structure of the lungs. As it would require too long a paper to attempt a discussion upon the entire subject of pneumonia, I shall omit the history, pathology, morbid anatomy, symptoms and diagnosis. However, before leaving the cause, I wish to state that bacteriologists admit that the diphlococcus pneumoniæ is not the only organism capable of producing pneumonia. It may be accompanied by other organisms which might be responsible for the complications and the irregularity of its course. Thus caused, pneumonia may be considered from two standpoints: First, it may be a general disease with a local expression in the lungs, as typhoid fever is a general disease with a local expression in pyers patches; or, second, it may be a local disease which infects the whole system and produces the constitutional symptoms which are characteristic of it, as is the case with diphtheria. If pneumonia is not infectious and due to germs, how about the many epidemics occurring all over the land?

To make my treatment better understood, I will implore your indulgence for a short time on the dry subject of physiology.

Pneumonia being confined principally to the parenchyma of the lungs, I shall only dwell upon that portion of its structure. Tracing from above down, beginning at the trachea which divides into the bronchi. The bronchi sub-divides into many bronchioles which split up into innumerable air cells or vessicles. These air cells make up the parenchyma of the lungs. This being the particular portion of the lung structure I wish to dwell upon, for it is through the parenchymal portion of the lung the blood and air exchange gases, and the blood oxigenated and purified. The walls of these little air vessicles contains very abundant small elastic fibers, which do not form distinct bundles for each vessicle, but anastamose freely with each other so that the same bundle of fibers go to make the walls for two or more air cells. This gives the lung tissue its greatest elasticity. Interwoven in these elastic fibers is the richest plexus of capillary blood vessels found in the human economy. These plexuses are so very close together that the spaces between them are much narrower than the vessels themselves. When these capillary blood vessels are distended with blood they form the greatest part of the walls of the air vessicles. The air vessicles are lined with flattened epithelium cells which are very thin, and are applied directly to the walls of the blood vessels, and it is through these thin flattened epithelium cells that the blood has the power of interchanging gases with the air. Here at the union of the blood and air in and around these air vessicles is the seat of pneumonia, and when the inflammation goes into consolidation—then the circulation as well as respiration is seriously interfered with. Hence, I shall implore a continuance of your indulgence until I can lay emphasis upon a few points about the heart and circulation. So that my treatment may be better understood. All of us are familiar enough with the heart to know that the walls of the left ventrical are much thicker than those of the right ventrical, and that the right ventrical pumps venous blood through the pulmonary arteries to the lungs, where, as shown above, it is

æriated and brought back as arerial blood through the pulmonary veins to the left heart, and then sent through the entire system, furnishing life to every organ of the body. But we are prone to overlook the fact that the two sides of the heart act simultaneously. And at the same time the blood is sent by the left ventricle through the aorta to the system, it is also sent by the pulmonary artery to the lungs, and that the circulation through the lungs meets with less than one-half the resistance than does the systemic circulation, and that the blood pressure in the pulmonary artery is about one-third as great as that in the aorta. So a cardiac and circulatory depressant would act in the same ratio as the pulmonary resistance and pressure is to the systemic resistance and pressure. Therefore a cardiac and circulatory depressant (whether a drug or venesection) would relieve the pulmonary engorgement at the ratio of two to one—*i. e.,* to the amount of depression on the heart and circulation, as it meets with less than one-half the resistance of the systemic circulation and *vice versa,* a cardiac and circulatory stimulant would act in the same ratio, namely two to one, *i. e.,* to the amount of stimulation to the heart and circulation, its action would be more powerful upon the pulmonary circulation, which is already overflowing from the pulmonary consolidation. Theoretically, a cardiac and circulatory depressant should be used during the entire course of the disease. But practical experience has taught us we can not lay any set law down and follow it in all cases of pneumonia, or any other disease.

Having given a brief sketch of the physiology of the heart and lungs, as the circulation and breathing are most interfered with, I shall now turn our attention to the treatment—a brief summary.

We have a patient with an infectious disease, high fever, bounding pulse, and rapid respiration, with a local site of inflammation (which soon reaches consolidation) in the parenchyma of the lungs. Every patient should be a law to itself, for a stout, robust young patient with plenty of rich blood

and strong heart and constitution should not be treated as a very weak, frail patient with a weak heart and constitution. We, however, treat the infectiousness the same in all cases. The germs, as above shown, are found in almost every viscus of the body and in the blood, saliva, etc. So to successfully combat their action we must give a general antiseptic with its most powerful action upon the pulmonary structure. I have found creosote from personal experience to be that drug. It has been my sheet-anchor in pneumonia for the past five years. I consider creosote the most reliable pulmonary antiseptic known to the medical profession, and it is by no means a poor general antiseptic. It is absorbed into the blood unchanged as pure creosote. Its value in pneumonia is made very clear when we note the fact that a microbe is the exciting cause of pneumonia, and its selective site of invasion is the parenchyma of the lungs. And that creosote is both excreted and eliminated by and through the lungs. Hence its special pulmonary antiseptic properties. Creosote enters the impure venous blood which is sent through the pulmonary circulation to the lungs to be purified. The pulmonary circulation being small compared to the systemic circulation, and as all of the blood of the body is forced through it, the lungs are more thoroughly bathed in this creosote-charged blood than any other viscus of the body. The capillary plexus of blood vessels above described is thoroughly permeated with pure creosote through the blood, destroying all microbes, or at least rendering the soil less fertile for them. Thus creosote acts as no other known drug will in combating the virulence of the diplococcus pneumoniæ. The many drugs and measures that are demanded in treating pneumonia forbid a liberal discussion of them all. It is by no means my desire to leave the erroneous impression that I rely upon creosote to the exclusion of other drugs that alleviate and control the symptoms. Aconite or veratrum in small but frequent doses will control the throbbing pulse as no other remedy will. Local applications have their place in success-

fully treating pneumonia. A liberal blister is often of inestimable value. I frequently use antiphlogistine and counter-irritants, especially in children. In the beginning of every attack of pneumonia it is necessary to get the emunctories thoroughly active, to assist in eliminating the waste and toxæmic products from the system. To do this I give purgatives (usually calomel), diuretics and diaphoretics. When the fever goes too high, febrifuges or cold water is required. If patient's heart is not weak I prefer the former. Heart tonics and stimulants should be given when indicated, and not given as a routine treatment. I prefer strychnia and alcohol. Anodynes should be given to reliev pain, expectorants are sometimes needed, but it is the exception and not the rule.

Pneumonia. Practical Suggestions as to Therapeutics

BY W. H. ANDERSON, M.D., WILSON, N. C.

The treatment of pneumonia is symptomatic, and will so continue until the anti-pneumococcic serum proves its worth. The methods of treatment vary from that of the doctor who says to his patients, "Trust in God and keep your bowels open," to that in which drugs are given *ad nauseatum et mortem*. The first is good as far as it goes, while there is some good in the second, but the rational plan of treatment lies midway between the two extremes. One thing is clearly established, there is no specific for this disease, so the toxæmia must be combatted and the symptoms treated as they arise. Drugs are used when indicated, and are continued as long as the desired physiological results are obtained. However, a change of treatment is always good treatment, when demanded by the symptoms.

In discussing the treatment of pneumonia, prophylaxis should always be mentioned. The importance of prophylactic measures was impressed on my mind by seeing a series of fifty-two cases in a hospital ward containing thirty beds. Forty-seven when admitted had pneumonia, while the remaining five, who were being treated for something else, developed this disease during a period of two months. While there is nothing conclusive in this series, yet it offers food for reflection. A simple and fairly effective plan is the following: the pneumonic sputum is received in a vessel containing a carbolic solution and is destroyed before having an opportunity of becoming dry. The lips, gums and teeth are wiped with a moistened cloth, and this burned. The nostrils, mouth and throat are kept as clean as possible by sprays, washes and gargles, while a cloth is held before the mouth to catch the pneumococci bearing spray which follows ordinary coughing. The room occupied by a pneumonia pa

tient should be afterwards disinfected as in any other acute infectious disease. So much for prophylaxis.

If the patient is seen during the initial chill he should be put to bed surrounded with hot-water bottles or some suitable substitute and given 1-8th grain morphia hypodermically. The room should be large, airy, and kept at 65 degrees Fahrenheit. The best ventilation should be maintained at all times, for the life-giving oxygen in great abundance is absolutely essential not only to sustain life itself, but for the comfort of the patient and the amelioration of symptoms.

Brisk purgation is secured at this stage by calomel in broken doses, followed by a saline, and throughout the course of the disease the first indication of fermentation should be promptly attended to. The regular onset of symptoms consisting of pain, fever, cough, high bounding pulse, with increased arterial tension, more or less dyspnoea, and nervousness to greater or less extent now demand the attention.

The pain should be controlled by local applications of counter-irritants, such as turpentine, by hot-water bottles, ice, and by opium in some form. If this pain is associated with intense dyspnoea and marked cyanosis in a robust patient, then the most immediate as well as permanent relief is obtained from wet cupping or venesection. In venesection from eight to twenty ounces of blood should be abstracted and the same quantity of normal salt solution should be injected either through the vein or by hypodermoclysis. This relieves the pain, the dyspnœa and the laboring heart, while at the same time it eliminates a large quantity of the toxines. The remaining toxines are diluted by the use of the normal salt solution, and since the toxæmia is the chief source of danger in the disease the last mentioned result is of the utmost importance. Wet cupping or venesection in pneumonia used at the proper time and in well selected cases are remedies par excellence.

Should the cough prove troublesome and if it is dry, hacking and hard, Dover's powder or 1-12th grain doses of

Heroin afford relief. When, however, there is much bronchial catarrh, with a good deal of viscid sputum ammonium carbonate is indicated to promote expectoration, being immediately withdrawn if it causes any disturbance of digestion. For most cases Dover's powder or Heroin are used during the first few days of the disease, while ammonium carbonate is used later.

The fever is allowed to take care of itself up to 103 degrees Fahrenheit. Between 103 and 104 degrees Fahrenheit it is reduced by alcohol sponge baths, while beyond 104 degrees, especially if associated with pronounced nervous symptoms and delirium, the ice pack and ice cap are useful. I have never seen quinine either in small or heroic doses do what is claimed for it.

In those cases in which venesection and wet cupping are not used, aconite or veratrum viride should be used to relieve the heart. They are given in two minim doses every two hours until the arterial tension and pulse rate approximate the normal state. In a way it is unfortunate that these drugs are called depressants, since it serves to frighten off some who would otherwise use them. Remedies which "depress" the heart from an abnormal to a comparatively normal state, relieving some of the symptoms due to its excited and laboring condition, and conserving its strength against that time when all its energy is absolutely essential, can not be wholly bad. For it is here in the vast majority of pneumonia cases that the final and most important stand is made, and the outcome depends on how well the heart has been cared for. Figuratively speaking, the finger is kept upon the pulse while either of these drugs is being given, and just as soon as the purpose for which they are given is accomplished they are discontinued. On the other hand, the conditions for which they are used must exist before they are ever commenced.

This is the general plan of treatment until the heart begins to flag, then cardiac stimulants are used freely and without fear. Of these the best are alcohol and strychnia, both

of which are reserved until there is an absolute indication for their use, when they may be relied on for results. Beginning with one ounce of whiskey and 1-60th of a grain of strychnia every four hours, the doses may be increased until the patient is getting an ounce of whiskey and 1-20th of a grain of strychnia every two hours. If these are given alternately, a stimulant is administered every hour, this seldom being necessary, however, unless the struggle is being made to tide the patient over the crisis. If quick results are desired, 30 minims of ether hypodermically or drachm doses of aromatic spirits of ammonia will best sustain the heart until alcohol and strychnine begin to give their more permanent results. When the pulse becomes rapid, feeble and compressible, and the heart sounds, especially the second pulmonic sound, begin to grow faint, stimulants are indicated.

Throughout the course of the disease troublesome insomnia is relieved by some form of opium. At times marked improvement can be attributed to a few hours of refreshing sleep. All the organs of elimination are kept in a state of activity, plenty of water is given, and the bowels kept open by epsom salts or enemata. It is very important that fermentation should be attended to, especially in the late stages of the disease. With the lower half of the lung solid, the heart weak, and the stomach and intestines distended with gas, thereby causing the diaphragm to encroach on the pleural cavity, great discomfort is felt by the patient, and it may even be a source of danger. After a saline purge, intestinal antiseptics such as salol or beta napthol in 5-grain doses, together with turpentine stupes, are used. If these are not sufficient, the rectal tubes should be resorted to.

After the exudate has begun to liquify, ammonium carbonate or ammonium chloride may be used with advantage to further the process of liquifaction, and to stimulate expectoration. Of these two, ammonium chloride is preferred by those who believe that the absence of chlorides in the urine is proof that in this disease a special use is found for these

salts. Should expectoration become excessive and bronchorrhœa set in, atropine will usually give most satisfactory results. It is given in 1-150th grain doses, the dose being increased to 1-75th grain until results are obtained.

If in the late stage dyspnœa is exaggerated, cyanosis marked, the pulse rapid, feeble and compressible, all showing venous stasis and an overloaded right heart, venesection is used as a last resort. Here, as in the first stage, the abstraction of blood is followed by the injection of normal salt solution, and in addition oxygen is freely used. I have not mentioned the use of oxygen before, because while it is good treatment, it is not conveniently used by a great many physicians.

In delayed resolution, pilocarpine may be used, but better results are usually obtained from the more generous diet, tonics and iodide of potassium internally and the local application of tincture of iodine externally. At times when this is not sufficient, good results are obtained from blistering.

In pneumonia milk is the chief article of diet. In addition to this, meat broths, predigested foods, eggs, small quantities of alcohol, iced grape juice, alone or with milk, and orange juice are given.

The anti-pneumococcic serum has not been mentioned, because it has not so far reduced the death rate in pneumonia, nor has it been proved to possess any special advantage in the treatment of the disease. Neither has it been proved that large doses of quinine or digitalis in the early stages are capable of aborting the disease, nor that carbonate of creosote is a specific. The theory that part of the symptoms of pneumonia are due to an acid intoxication which should be treated by large doses of the alkalies, one to three-drachm doses of bicarbonate of soda, has not yet been generally accepted. In other words, there is neither specific nor routine treatment for pneumonia, and the best that one can do is to combat the toxæmia and treat the symptoms as they arise.

Influenza, its Sequelae and Therapeutics.

BY C. B. M'ANALLY, M.D., MADISON, N. C.

It might not be out of place in the beginning of this paper to give a brief definition and history of this disease. Under a variety of names—Russian fever, epidemic catarrh, la grippe, and influenza—the disease has been well known for more than two centuries. An infectious disease with a continued form of fever, accompanied by a great prostration of all the vital powers, with an almost universal tendency to inflammatory conditions of one or both of the respiratory tract and the alimentary canal. During the past seventy-five years we have had four epidemics in this country. The first in 1830 and the last reaching North Carolina in 1891. After each epidemic, for a period of two to five years, we have had it in almost epidemic form each year, gradually becoming less frequent and less severe. It is one of the most contagious diseases known, and is transmitted directly from person to person, spreading over whole nations and even continents within a few weeks. The bacillus, or causative factor of the disease, was isolated by Pfeiffer—and contrary to the usually accepted theory, is found in more than five per cent of all acute tonsillar and laryngeal affections, thus accounting for the isolated cases we so often see each year, far removed from the epidemics themselves. One very high authority has recently declared that it is highly improbable that we ever have it or see it in an endemic form. Yet I am sure many of the gentlemen before me to-day share my experience, in that they see a few cases each year. The importance of knowing what Auerbach has established in regard to the influenza bacilli being found endemically in such a large per cent of acute throat troubles, can not be over estimated, inasmuch as it renders absolutely certain the diagnosis we so often make in these isolated cases, contrary to the expressed opinion of this high authority before mentioned—Dr. Tay-

lor. During the last epidemic in this section of the State not more than fifty per cent of the population over the age of three years escaped, and since then fifty per cent of the remainder have been affected by this disease. Children are for some unexplainable reason not as liable to become infected as adults, and those under three years of age are largely exempt. No disease with which I have come in contact, probably, gives the patient the mental and bodily unrest that does influenza. Coming as it does generally with its first manifestations of a nasal catarrh or gastric irritation, followed within a few hours, or accompanied, and often really preceded by intense lumbar pains, aching of legs and head with soreness of whole body, chilliness, often amounting to a distinct chill. Cough is almost always present in the respiratory variety, and often in the gastric form, sore throat and hoarseness in most of the severe cases. The mental faculties are acute, except as to the extreme nervousness and in the cases of active delirium. The systemic prostration is marked from the beginning, in most cases—and the small, irregular pulse is almost diagnostic. In fact, so far as the direct danger is concerned in an uncomplicated case, it is altogether to be expected from this condition of heart failure alone. This failure of the heart, as before stated, is accompanied by coexisting muscular and general bodily weakness. Profuse cold perspiration—danger signals warning us of the profound toxæmia that is paralyzing all the forces of life. I have not found the sudamina so often stated as one of the constant symptoms, in a majority of my cases. But the tongue is always deeply coated, first generally white and deeply indented at edges. Often dark-brown offensive coating, specially on back part. In the gastric variety you more often find the red tongue than the white or brown. The pulse, in my experience, is high, generally from 110 to 130; and temperature from 100 to 104. In no disease is there so complete anorexia—all thought of food being nauseating. Vomiting in many cases being a constant symptom. The bowels are not regular; sometimes

being open, sometimes constipated. The urine is high colored and has the sweetish fever smell that is so constant in the continued fevers. From the history of the disease, as we see it, we might reasonably expect a very high death rate, and yet such is not the case. Very few uncomplicated cases result fatally. However, in my opinion, there are few acute diseases that are to be so much dreaded as this. When you think for a moment of its complications—nearly all of which are immediate results of its penetrating effect upon the vital functions—among the most severe that we meet in the practice of medicine, first of the respiratory tract, pneumonia stands at the head of the list. So far as I have been able to find in post-mortem tables, no death from la grippe has been recorded, that did not show either lobular or lobar consolidation of the lung. Laryngitis, bronchitis, congestion and œdæma of the lungs; pleurisy, abscess and empyæma, all being common complications. In the gastric varieties, the acute or subacute gastritis, the severe forms of diarrhœas and dysentery. The bilious or "jaundiced" condition of the liver or severe hyperæmia of that organ. All these of themselves go to make up a formidable list of human afflictions. And when we try to enumerate their sequella, we do not longer speculate at the gravity of this disease. When we have once realized the direct danger from this disease and its complications, we are at least partly prepared to recognize its yet most dangerous features—the condition in which it leaves our patient—the things that so easily come after it—its sequella.

In no disease, that is of itself not dangerous, is the whole human organism left in a condition of such supreme state of exhaustion as in la grippe, thus rendering the patient a most promising subject for the attack of any disease—the weakened nerve system during convalescence, carrying the patient into insanity, most often of the form of melancholia, though in my experience this has happened in only three cases. The condition of the eyes is such that in a large majority of cases it is weeks and even months before the patient can use them

for reading any length of time—the functional disturbance often developing into an iritis, and even neuritis. Nasal catarrh, as might be expected, is a frequent sequel. A normal condition of the heart, in severe cases, is not regained for a period of less than three months, very often not until after six months or more—persistent vertigo attending your patient for months and months. Indigestion, gastric irritation and diarrhœa often follow even mild attacks. Chronic nephritis is one of the most dangerous sequels to which the convalescent is specially liable. Otitis is perhaps third on the list of complications, and as a result many cases are left with impaired hearing. From the nature of the disease we would naturally expect a large per centage of cases to be rendered special subjects for after-attacks of pulmonary diseases. Hence we find many cases of consumption engrafted on these convalescents or following within a few months, weeks or years. In my own mind the great prevalence of tuberculosis in this country is directly traceable to the epidemic of influenza in 1891 and the cases we have had each year since. In my own section I have been able to satisfy myself beyond a doubt that this is the case. I have seen it suggested that the increase of appendicitis during the past fifteen years is more than likely one of the complications or sequels of this disease.

When we come to the treatment of the disease there is much that might be said, but I shall confine myself to those things that I have personally used and in which I place my reliance. The diagnosis being comparatively easy, the character of the disease well known, the treatment should be a simple matter. In most adult cases a full dose of calomel (ten grains) should be given; five to ten grains of sulph. of quinine, with an equal amount of Dover's powder, accompanying this or immediately following a full dose of whiskey or brandy. The quinine and Dover's to be repeated as needed, generally every three or four hours. The stimulant will be needed from four to six times a day. A hot lemonade is very grateful at any

time. Antipyrin and phenacetine or acetantilid must be given if fever is very high. One-quarter to half grain codea given for the aching and cough if other remedies do not at once relieve, and repeated as needed. Strychnine I give in nearly all cases. Have used sparteine in only a few cases. The complications must be looked for and treated as they arise. All convalescents must be looked after carefully and tonic treatment given them. Hypophosphites with strychnine is safely given in nearly all cases. Iron, quinine and strychnine should be given in most cases. From the beginning of a case plenty of nourishment, in the form of milk and eggs and animal broths should be given. In convelescence a generous diet should be insisted upon. For weeks and months good food, exercise in the open air, sports and pleasant recreations are indispensable. By thus carefully looking after our patients in convalescence we will save ourselves many disappointments and many valuable lives.

I make no excuse for bringing this subject to the attention of this Society. I consider it one of very grave importance to every physician who is in the general practice of medicine. And while I may have offered nothing but what we all may know, if I shall cause this disease to be watched more closely and followed farther into its convalescence than is usually done with almost any other disease, I shall feel amply repaid for the time I have occupied.

Treatment of Pulmonary Hemorrhage.

BY F. J. CLEMENGER, M.D., ASHEVILLE, N. C.

The inability of the general practitioner to find any promising line of treatment laid down in text-books on the practice of medicine, or works devoted to the special subject of tuberculosis, has made the problem of what to do first, when we find our patient in the grasp of a profuse pulmonary hemorrhage, a most puzzling question.

There can be no more disconcerting scene than one in which we enter a room to find our patient, with blood streaming from mouth and nose, and an agonizing look of impending death on his face, anxiously awaiting the appearance of the physician with immediate aid which is, unfortunately, not always in his power to give.

Even the specialist in lung diseases is, at times, in a dilemma when called to see the patient, whom but a few hours before he left in good condition, now in the grasp of a seemingly fatal hemorrhage, and well may he feel alarmed, for often he becomes simply a passive spectator in a battle for life which nature must, under the ordinary methods, fight almost unassisted.

Could we but know that by means of a tourniquet or hemostat we would, as in hemorrhage from other sources, soon be able to control the bleeding vessel, we would calmly proceed to the best management of the case. But the knowledge that in the end we can do nothing directly to stop the hemorrhage often disconcerts even the most experienced.

It is a peculiar fact that the fear of the patient is usually out of all proportion to the amount of blood lost, and the physician's first, best point in treatment will be to allay this apprehension, which he can best do by assuming a quiet and confident manner, particularly when he enters the room.

It is also a fact that most pulmonary hemorrhages would be checked by nature, even if a physician was not called, but

many have been fatal because the patient's mental condition was such that absolute quiet was impossible and without it lowered blood pressure could not be had.

Blood pressure within the pulmonary artery is something about which we know little, but it is definitely decided that it is considerably less than that in the aorta, though subject to a vaso-motor influence. Experiments have shown, however, that drugs having influence on the systemic pressure may have no effect whatever on the pulmonary circulation, and that in some cases may cause a rise in one and fall in the other, or it may rise and fall in both at the same time.

These facts have made the use of some drugs theoretically desirable, in hemorrhage from other sources, undesirable in the treatment of this condition, the chief one of which is ergot, which, according to the experiments of Bradford, causes a distinct rise in the pulmonary pressure.

Morphine is the drug most commonly used by those having greatest experience, and is not only of value because of its effect on the pulmonary circulation, which it distinctly lowers, but is also valuable in controlling the cough, which sometimes, by its persistence, is responsible for the continuance of the hemorrhage. Care should be taken that the drug is not pushed too far, as it may so deaden the reflex inducing the cough that in small but continued hemorrhage, a pneumonia may be set up from inspiration of the blood.

Atropine is also of considerable value in the small hemorrhages, but should be used with caution in the rupture of a larger vessel, though in capillary ozzing it is even more preferable than morphine, as it can be given over a considerable length of time.

As styptics, we may mention tannin, sesquoxide of iron, aromatic sulphuric acid, and lead acetate as the ones most commonly used, but they seem to have practically no influence in this condition.

Aconite may be given in cases where the general blood pressure is high, and is very useful to quiet a rapid and excitable heart.

Adrenalin is said by some to prove valuable through its influence on the vaso-motor system, but its action on the lesser circulation is not fully understood, though, clinically, it seems to produce results in the milder cases.

Calcium-chloride is used for its effect on the coagulability of the blood, together with gelatin, but neither are productive of any great influence.

Digitalis and alcohol are both contraindicated, though used considerably, because they cause a distinct rise in the pulmonary circulation.

Very little aid can be expected from medication in hemoptysis, however, but our best help must be obtained from application of mechanical principles, and the first and most important one is that of posture. Nothing is more conducive to lowering blood pressure that the recumbent posture, and the patient should be placed in this position and, under no circumstances, allowed to change until the bleeding has stopped unless it becomes so profuse as to threaten life by suffocation.

The blood should be wiped away from the mouth with a napkin by an attendant and the patient not permitted to use the arms for anything. Limitation of the respiratory movement, by placing adhesive straps around the chest, is thought by some to do a great deal of good; their value is still questionable, however.

Binding of the extremities, where there has been failure to control by other means, is not to be forgotten in the more serious cases, but care should be taken to see that the arterial supply is not cut off by having the bandages too tight.

Among the valuable aids is the ice-bag, placed over the præcordia, when the heart is very rapid, but it is a useless measure if placed over the lung with the idea of influencing the hemorrhage through the vaso-motor system.

Infusion of salt solution in cases of very profuse hemorrhage is not to be forgotten.

The application of the surgical principle of direct pressure

to stop a bleeding vessel has induced a number of men to produce an artificial atelectasis, but the results do not seem to have been satisfactory. The procedure has suggested to me a means of stopping pulmonary hemorrhage which, to my knowledge, has never been tried and theoretically not objectionable in a great many cases.

Murphy, of Chicago, has demonstrated that an artificial atelactasis can be rapidly brought about without any serious harm being done to the patient, by means of introducing carbonic acid gas.

This procedure would require no special apparatus, other than that usually found in the armamentarium of the general practitioner, and might prove of particular value in institutions where the gas could be constantly on hand.

The operation was performed by introducing an aspirating needle into the pleural cavity and passing two to five hundred c.c. of the gas through a sterile filter into the cavity. In this way pressure of measureable value can be brought about, and unless the lung is too tightly bound down by adhesions, we would have no trouble in controlling a hemorrhage uncontrollable by other means.

Murphy has shown by the X-ray that a condition of complete atelectasis is produced. The gas must be withdrawn when no longer needed, care being taken to place a pad over the puncture to prevent subcutaneous emphysema.

Diet should be carefully guarded and the solid foods returned to only after active bleeding has ceased for some time.

The patient who has had a hemorrhage should be instructed to avoid pursuits which have a tendency to raise the blood pressure, but on the appearance of the first sign of a beginning hemorrhage in the future to, at once, lie down and send for the nearest physician.

A Brief Discussion of Epilepsy with Reference to its Pathology and Treatment.

BY E. H. BROOKS, M.D., REIDSVILLE, N. C.

Ample apology for bringing to the attention of the Society a discussion of such an old and well-known disease as epilepsy is found in the fact that the treatment given this disease by the average general practitioner is the same classical one given by our forefathers years ago before the dawn of progressive medicine. It is a most grievous error to regard epilepsy as an incurable disease, and that treatment offers only slight if any relief. A disease of such gravity, so widely distributed, and found to exist in one case in every three or four hundred people, regardless of age or sex, offers an inviting field for independent research, and should receive our most intelligent efforts. Observation shows that many medical men regard their duty fully discharged when an epileptic receives at their hands large doses of bromides and perfunctory advice in regard to diet and care of the general health.

Such a course is indefensible, and not only unfair to the patient, but assumes a question of casuistry with the physician. The writer's awakening along this line came several years ago when an epileptic of great prominence, and a warm personal friend, committed suicide as a result of the treatment given rather than from the ravages of the disease. Unpleasant memories of this case still linger, and the writer firmly believes that it is a crime against revealed medicine to saturate our epileptics with bromides and then relegate them to that class of unfortunates, who in the providence of God, have been afflicted with a well-nigh incurable malady. Under especially favorable conditions the writer was enabled to bring under observation nearly three hundred epileptics in the wards of two large institutions in a distant State. Painstaking study, as far as possible by laboratory methods, was made of the pathologic and morbid conditions of these

cases. The results of these investigations are given, not for their profundity or originality, but with the earnest hope that they may be the cause, in some slight degree, of a more extended study of our cases of epilepsy.

1. *Pathology.*—A study of the pathology of epilepsy, unfortunately, does not provide us with a specific, but it does put us in the way of combating some of its most distressing symptoms. The brain proper is found to be structurally intact and approximately normal. Usually there is a small excess of lymph in the sub- and peri-vascular spaces. The blood vessels show some congestion, but slight, if any, thickening of the walls. These changes may or may not be present, but late research shows that there is one constant symptom present in every case of true idiopathic epilepsy: an adhesion between the superior frontal convolution and the duramater on the left margin of the longitudinal sinus. This adhesion is formed of white connective tissue, varying from the size of a pea to a broad band an inch or more in breadth. It is extremely tough and tenacious, and part of the brain tissue comes away with it when forcibly torn from its attachment. This lesion is assumed to be present in all cases of true epilepsy, and it is now agreed by practically all psychiatrists to be the predisposing cause of epilepsy. In the only post-mortem coming under personal observation this lesion was found.

2. *Morbid Conditions.*—Consideration of the morbid conditions present is more interesting, since a proper conception of what we have to combat is essential to formulate intelligent treatment.

Laboratory experiments show the following abnormalities, beginning with the alimentary canal:

(a) *Saliva.*—In all cases either excessive or almost entirely absent. Analysis shows the percentage of tyalin very low or entirely absent. This indicates faulty digestion of the carbohydrates, and gives us a hint as to diet which will be referred to later.

(b) *Stomach.*—The quantity of mucous present is excessive, thick and tenacious. Portions of undigested food remain, showing subnormal motility. Pepsin is about normal, while acidity is reduced and sometimes present only by trace. Crainsky removed the stomach contents of a patient in status, filtered it and injected it into the circulation of a rabbit. The rabbit developed typical convulsions, showing that the stomach was a reservoir for toxic material, the absorption of which was the exciting cause of the spasm.

(c) *Intestines.*—As may be inferred from stomach conditions above noted, intestinal putrifaction is present in a large majority of all cases and the tendency to tympany constant.

(d) *Blood.*—Always some anæmia, but the most marked changes are found in the plasma. Ammonium Carbanate (not carbonate) is greatly increased from normally a trace to approximately .08 gm. Alkalinity of the blood is greatly reduced. The blood is surcharged with some toxic principle which has failed of oxidation. This toxic principle is a cerebral poison, and in practically all diseases where there is a rise of fevers (Osler mentions Typhoid) the convulsions cease because the toxic matter is burned up by the elevation of temperature.

(e) *Urine.*—A much better idea of the metobolism of the patient can be secured, and the changes and abnormalties found in the other part of the body, can, in many cases, be verified in the urine. The alkaline phosphates are increased, showing cerebral excitement, congestion, or extra-metabolic changes in the brain. The B-sulphates are greatly increased, verifying intestinal pretrefaction, and pointing to sub-acidity of the stomach. Ammonia is decreased, showing retention and faulty metabolism of the proteids. Urea is present, indicating hepatic congestion. Indican is present in excess.

(f) *Heart and Blood Vessels.*—As is well known, the heart of an epileptic is very erratic—sometimes varying between tachycardia and brachycardia. Between seizures the pulse is ordinarily compressible, the arteries soft and dilated, and

the circulation equalized. Immediately before, during or after an attack the heart is rapid and the blood vessels tense and contracted. Confirmation of this can be seen. Witness the effect of the inhalation of amyl nitrate in aborting a convulsion by dilating the blood vessels.

Treatment.—Treatment of epilepsy may be considered in two classes: Drug treatment, and Dietetic and Hygienic treatment.

1. *Drug Treatment.*—In a disease where there are so many morbid conditions to be met, it is manifestly impossible to plan a course of treatment applicable to all cases. In addition to bromide (which will be discussed at more length later on), belladonna, antipyrine, ergot, hyoscine, simulo, lactate of zinc, and solanum carolinense, used singly and in combination, have all been championed as sovereign remedies in epilepsy. Flechsig claims good results by the use of his unscientific so-called opium-bromide treatment. This consists in the administration of one grain of opium three times a day, gradually increased to five grains three times a day, when large doses of bromide is substituted for the opium. Belladonna is semi-occasionally useful in some cases of nocturnal epilepsy. Antipyrine seems to do good in some cases for a time, but it is dangerous by reason of its cumulative effect, and the good results achieved are only transitory. Borax was in great favor some years ago, but it was soon abandoned on account of gastro-intestinal irritation following its use, and its disastrous effect on the kidneys. The writer believes all the other drugs mentioned are valueless with the exception of bromide, which unquestionably occupies first place in the treatment of epilepsy. It was first used for this purpose by Locock in 1853, and since that time it has been erroneously considered a specific in large doses by some investigators. While it is true that bromide in small doses does good, it is equally true that it does a great deal of harm in large doses. In fact, it is an open question as to whether the good accomplished by large doses of bromide is not more than offset by the harm done.

Certainly it is a great error to regard bromide as a specific and to depend on it solely for the treatment of epilepsy. To the brilliant investigations of Crainsky is due our first knowledge of the effect of bromide in the system. He found that bromide dilates the arteries, thus lowering blood pressure and equalizing circulation.

He also discovered that when either sodium or potassium bromide is given it was eliminated in the urine as ammonium bromide, showing that ammonium carbonate was acted upon by the bromide and the ammonia eliminated as a bromide. Thus it was seen that bromide met the conditions fairly well. Further experimentation, however, revealed the fact that bromide, especially large doses, is very slowly eliminated, and accumulates in the body; and as a final result the blood is loaded with large quantities of ammonium bromide and sodium carbonate. A chemical reaction takes place between these two compounds, called "reaction in bulk," and there is formed again ammonium carbonate and sodium bromide. This leaves the patient like he was before bromide was given, and of course there is a return of the convulsion with renewed vigor—effectually disposing of the theory that bromide is a specific. Many alienists now claim that bromide hastens dementia, and probably is the cause of it in persons suffering from other forms of insanity. Statistics show that ten per cent of all epileptics become insane. Peterson (American System of Medicine) claims that a larger proportion than ten per cent of epileptics suffer mental deterioration (dementia) from the too free use of injurious drugs. Certainly bromide must be included in this indictment, as its injurious effects on nervous tissue is readily seen by its anaphrodisiac and cerebral depressant effect. Mental apathy, confusion of ideas, loss of memory and distressing acne are all distinctive signs of continued administration of bromide. More than once epileptics have come to the writer to get relief, not from the epilepsy, but from the unbearable acne, gastric distress and mental depression arising from bromide treatment.

Given a condition wherein there exists a predisposition to gastric derangement, anæmia and ultimate dementia, is it right or just, by a system of treatment, to add to these morbid conditions already existent, or to hasten, if not cause, a hopeless case of dementia? The function of medicine is to cure, and in the event a cure is impossible, to alleviate; certainly it should not make conditions worse. It is not only a question of sound medicine, but of sociology as well, as to whether it is not better to allow an individual to have occasional epileptic convulsions and make a useful citizen between attacks, than to so deaden his mental faculties that he has no fits, and is also at the same time incapable of intelligent citizenship. Undoubtedly large doses of bromide will for a time keep off fits, but what is there to be gained in having your patient so apathetic and so dead mentally that he is incapable of throwing a decent fit?

It is barely possible that the names of such famous epileptics as Rosseau, Napoleon, Cæsar and Alexander the Great would not adorn the pages of history had they been submitted to this latter-day excessive bromide treatment.

In a recent personal communication to the writer, a physician of wide experience in the treatment of epilepsy and formerly connected with the Maryland State Hospital for the Insane, says: "It is fast becoming a question whether the bad results from the bromides as ordinarily given do not far outweigh any actual or fancied benefits from their use." The writer finds by consulting reports sent out a few years ago from the Ohio State Home for Epileptics that the average dose of bromide given (single and in combination) by the general practitioner, as far as could be ascertained, was between six and eight grammes daily. It is freely admitted that there is high authority for such large doses of bromide. Hirt says: "The minimum daily dose (bromide) for adults in cases of pronounced epilepsy is eight grammes." However, the writer is constrained to believe that empiricism is sometimes better than routinism. The way to truth is occa-

sionally found better by practice than by theory. It is far from the purpose of the writer to be understood as believing that bromides have no place in the treatment of epilepsy. He believes that bromides do good, but that they should be given, not to affect the brain per se, but for their true physiological effect, viz., dilitation of the arteries, lowering blood pressure and equalizing circulation. Small doses of bromide does this as well as large doses, and this is the limit of its utility. Rarely, if ever, should the maximum adult dose be over one gramme daily. It should be given in combination with those drugs which seem best to meet the condition we seek to improve. Brief reiteration of the most striking morbid conditions will fix the choice of drugs: (1) Tense and contracted blood vessels; (2) Excessive mucous in the stomach and sub-normal motility, resulting in intestinal putrefaction; (3) Reduction in alkalinity of the blood; (4) Erratic heart.

The first condition, as said above, is admirably met by bromide—preferably strontium bromide, since no acne follows as a rule. The second condition is best met with calcium chloride. Experiment shows this drug is a most excellent solvent for gastric mucous, and that it stimulates involuntary muscle fibre. So by its use we clear the stomach of mucous, increase and render available the hydrochloric acid, and motility is increased by stimulation of muscular fibre. It is an exceedingly valuable drug, as it also hastens the elimination of ammonia, and at the same time acts as an excellent heart tonic and stimulant. Reduction of alkalinity in the blood (3) is best overcome by an alkaline solution given one hour after meals. This also increases diuresis.

Adonis vernalis acts best in steadying the heart. (4) Digitalis is not used for this purpose because (in direct contrast to bromide) it contracts the arteries and increases blood pressure, while adonis vernalis does not. Combining these drugs in proper proportion, we have the following very effective prescription, per dose:

Strontius bromine (or Sodium bromide) Gr.v.
Calcium Chloride, Gr.iii to Gr.v.
Ex. adonis vernalis, fl M l to Miii.

M. and S.—Given in wine glass of water t.i.d. one hour before meals.

A dose of concentrated phosphate of soda once or twice a week acts well in depleting the portal system and freeing the intestines from putrid matter. If meteorism is troublesome it should be corrected by salol given as needed in three to five-grain doses.

The writer does not believe the treatment above outlined is a specific for epilepsy, but he has seen its successful trial in enough cases to warrant the belief that it is of undoubted value when used in conjunction with dietetic and hygienic treatment to be considered under another heading.

At the State Hospital for the Insane at Skyesville, Md., this treatment has been given a thorough trial in grand mal in the epileptic wards. In nearly all cases, the writer was told, great good was done. The patients were quieter, more industrious, happy and more cheerful. Three cases are recalled where the convulsions were reduced from 30 to 40 attacks of grand mal a month to 3 to 6 attacks of petit mal monthly. There was no unsightly acne, and in nearly all cases grand mal was changed to petit mal. The writer's experience in 12 cases of grand mal, occurring in his own practice and in the practice of brother physicians who were kind enough to place the case under this treatment, is in line with the above results. The only cases where no improvement was noted were in cases of feeble-minded children. As is well known, nothing can be done in cases where epilepsy is established before the mind is developed.

Male epileptics yield much more readily to treatment than do females—just why this is true is not known. Quite recently a new treatment has come forward as a candidate for favor in the treatment of epilepsy. It consists in the ad-

ministration of sodium cacodylate with bromine. It has won few friends as yet.

2. *Dietetic and Hygienic Treatment.*

(a) *Dietetics.*—Moderation should be exercised always, and patient should guard against excesses of all kinds. Supper should be very light. Allowed:—Meats in moderation, fresh green vegetables, toast, tea, coffee, milk, in some cases. Forbidden:—Fats, potatoes, peas, white bread, molasses, cakes, candies, pies, pastries. Some authorities recommend an absolute vegetable diet, which is probably an extreme view.

(b) *Hygienic.*—"Plain living and high thinking" should be the life rule of every epileptic. Instead of brooding over unfortunate conditions, the mind should be directed to high ideals and kept busy with congenial employment. There is not much hope for an epileptic loafer. Exercise in the open air (short of fatigue) should be insisted upon. Punctilious regularity should prevail in everything—excess in nothing. A Schott bath occasionally is an advantage. A modified Turkish bath at intervals, when possible, is sometimes of value.

Conclusion.—The writer wishes it understood that in this discussion his use of the term epilepsy refers to the genuine classical form, and not to those various pseudo forms arising from traumatism, fright, eye strain, peripheral irritation, etc. However much these spurious forms may clinically resemble the genuine article, there is a vast difference in both pathology and treatment.

The difference is even greater between the so-called Jacksonian (cortical epilepsy) and the genuine epilepsy. Such abuse of terms is unjustifiable.

No reference has been made to the surgical treatment of epilepsy, as any condition amenable to surgical treatment is not true epilepsy. Peterson (American System of Medicine) says that out of some two thousand cases coming under his observation, not more than 15 or 18 were considered subjects for surgical treatment, and that out of 12 or 13 of this

number operated upon, not one was cured. Trephining does little good, since in nearly all cases a new cicatrix is merely substituted for the old focus of disease.

The proposition to cure epilepsy, advanced some years ago in a frenzy of surgical enthusiasm, by ligating the vertebral arteries, has rightly been confined to "innocuous disuetude." Hypnotism has not been mentioned as a remedial agent because it has proven valueless. It is not within the scope of this paper to discuss these matters, even if the writer was so inclined. The discussion seeks to be brief and suggestive, rather than exhaustive and profound.

Metabolism.

BY I. W. FAISON, M.D., CHARLOTTE, N. C.

Mr. President and Gentlemen of the North Carolina Medical Society:

In discussing a subject of such vast importance as this is to our profession to-day, you can expect me only to touch some of the most salient points here and there. It is eminently true that metabolism plays a very important part, both in health and disease; therefore, I shall discuss both a perfect and a faulty metabolism. What, then, is metabolism? What are some of the most important conditions both without and within the body to establish metabolism? What parts of the mechanism of the human system does it touch? I understand that metabolism is that process by which all digested food is transformed into living tissue, and when this food has performed its mission, it is then reduced to effete matter to be discarded and excreted. Either one or the other of these conditions is always present; for the simple reason that a constructive and a destructive metabolism must at all times be at work within us; that we can maintain our accustomed well-being.

The conditions without the body are wholesome foods, properly prepared, good drinking water, healthy hygienic surroundings. Those within the body are intricate and many. Commencing with the mouth: you are well aware of the fact that this is the starting point of digestion, and at the risk of being a little tedious, to make my story complete, I must take up things as they come. A full quota of well-preserved and well-cared for teeth, that the mouth may be kept as clean as possible, not with the view or intent of destroying all bacteria, for it is an established fact that with the aid of some of these bacteria that we get perfect digestion. Healthy, full secreting salivary glands, that the first step in digestion may be perfect, namely, the beginning of the trans-

formation of the starches into sugars. A prolonged and perfect mastication of all foods, that the bolus may be well masticated and well moistened with the saliva, so that it is delivered into the stomach in a condition ready for the stomach to commence its function. The part that the stomach plays in digestion is not so extensive as we once thought. It acts as a large reservoir, secretes pepsin, rennet and hydrochloric acid, and churns the food well.

The secretions of the stomach have an important function in beginning the digestion of all proteid foods. From two to four hours, if the muscular and nervous forces of the stomach are in healthy condition, the contents will be emptied into the small intestines.

Here commence the intricate and most important of all the digestive functions. Here the food comes in contact with the secretions of the pancreas, the liver and small intestines, particularly those from the glands of Bruner and Leiberkuhn. What are the secretions from these different sources?

I will take first the pancreas. To me this is the most important of all the digestive organs. There are two kinds of secretions—external and internal. With the latter we are not thoroughly familiar. The future researches have this in store for us, and when all this is revealed we will know and think a deal more of pancreas; of the external secretion we know more. It is a straw-colored, viscid, alkaline fluid containing ferments which have many important functions to perform. They act upon the proteids, the starches and the fats. Trypsin, the great proteolyctic ferment, as it exists in the small intestines, exists in the gland itself as tripsogen, as stated by Heidenhain and Podolinski, and this as it enters the small intestines is transformed into tripsin through the influences of important bacteria, water and air. Acids in small percentage retard its action. Therefore, its medium must be alkaline; so that both here and in the stomach we find proteid ferments, which differ very materially in their actions. The stomach ferments causes a swelling and grad-

ual solution of the albuminous substances, while in the tripsin ferments there is a breaking up and melting away of the albuminous substances; both capable of converting these substances into peptones and albumoses.

Diastose, another ferment identical with the salivary ptyaline, so far as we know, takes up the uncompleted work of the pytaline, converting the starches and glycogen into sugar. The next important ferment is the fat splitting or steapsin. The beginning of fat digestion. This, too, must be in an alkaline medium. Fatty acids and glycerins are formed and with the alkalies unites to form the soaps and aid in the emulsification of fats.

The liver, so far as true digestive ferments are concerned, I will only mention the bile. To-day this ferment does not enjoy the importance it did in the past. Its value as an excretion is more valuable than as a secretion, for in its study we find that its first function is to render innocuous the products of body metabolism stored in the liver and forces them out and into the intestines to be carried out as dead matter.

The most important elements of the bile are its acids—the glycocholic and taurocholic and salts—which combine and form glycocholate and taurocholate of sodæ.

In the acts of digestion the principal function of bile is to promote the splitting, emulsifying and absorption of the fats, to promote antiputrifaction and stimulate intestinal preistalsis. The small intestines is the reservoir for the foodstuff as it passes out of the stomach, also the secretions from the pancreas and liver; besides these, they furnish secretions, through the glands of Bruner and Lieberkuhn, of mucous, juices, bicarbonate of sodæ and invertin. These serve to keep the contents liquid, the medium alkaline and the invertin, which is also partly supplied by the pancreas, converts maltose into sugar. The peristalic action of the intestine is necessary for the proper mixing of all the ferments with the foods and the forcing of the contents along the alimentary canal.

In the small intestines the most of the absorption of the digestives occurs. This is accomplished through the villi and goblet cells. The blood current performs its mission by taking the prepared digestive elements throughout the body and to the mouth of each cell.

The cells are exceedingly important and their study very interesting. The cell is the unit of all animal life. Here all vital processes occur. You well know that they in their entirety form the chemical laboratory of the body, and to them all foodstuffs, when thoroughly digested, reach their final destination. The cells are peculiar, in that they have such varied functions. Some are adapted for securing food, some for digesting food, others for throwing off effete matter. Different cells for each system in the body is essential. The cells of the bones take out of the blood current mineral matter. The cells of the other systems feed on what they need to keep their system in perfect condition.

You can not control the food demands of a cell. It will only take what it absolutely needs. No makeshift or subterfuge will do. If a cell does not find in the blood current the exact element of food that it needs, it will in the midst of plenty simply stand by, close its mouth and die of starvation. You can then readily realize the fact that for a perfect metabolism we must know the demands of the cells and be wise enough as medical men to furnish the needs.

With all these conditions normal, why should we sicken and suffer? Barring accidents and infections, I am of the opinion that the most of us would not be sick and our spirits would be in high feather.

This brings me to faulty tissue metabolism.

In the very beginning I must say that the primary and essential causes of constitutional disorders of mal-nutrition and mal-assimilation, causing faulty metabolism, are still veiled in darkness. This subject is too large for a paper for a society occasion; therefore, I shall turn to some of the more practical points of faulty metabolism. The three groups of

diseases that readily present themselves to our consideration bearing upon faulty metabolism are the lithemic, the diabetic and the gouty. The lithemic diathesis shows itself in all conditions that we mean when we refer to biliousness in all its phases. I saw a doctor in my town just a few days ago with these symptoms: For the few preceding days had suffered with slight nausea, bad taste in his mouth, constipation, suddenly he became unsteady in his thoughts and staggering in his gait, the blood vessels about his eyes and face diffused with blood, tenderness over the hepatic region, conjunctiva slightly tinged yellow with bile. No special name is laid down in your books for such a condition, save and except the lithemic or biliousness. Still I know that it was entirely due to a faulty, irritating metabolism, and treating him with this view, in twenty-four hours all his unpleasant symptoms had vanished and he was able to go home. All conditions of whatever nature that touches the system here affecting the bile conditions to the extent of manifesting jaundice is the same; should it go on to the formation of gall-stone we will then have added to the lithemic the gouty or uric acid diathesis. The nucleus of all these stones being some acid crystal.

Second, the diabetic diathesis pertains to sugar, and this must be in the circulating blood and in the urine as it is excreted from the body. Just how to account for these changes in the metabolism I am not fully able to satisfy my mind; therefore, I don't feel that I can satisfy yours. The fact still remains that now and again grape sugar does constantly circulate in the blood and urine, and when this is the case a very serious condition confronts you.

All of us time and again in our medical experiences have had men undergoing an examination for life insurance to show sugar reactions in their urine. We have reported to the medical examiners at the home office the facts, the parties have been promptly rejected; after ten years we have seen the men going about their daily affairs hearty and robust as ever. I have stopped and wondered at such conditions. I

am now thoroughly convinced that here was a case of just simple faulty metabolism with no special evil significance, a case safely insurable to the company. You may have this condition follow when too much sugar is taken into the system. The liver can care for only a limited amount of sugar; if more than its limit is taken in it is dumped directly into the blood current and eliminated by the kidneys. Other conditions can do the same thing, and with gouty diathesis already established we will often have the evidence of sugar to appear in the urine. There are many cases pronounced hopelessly diabetic mellitus that are only a combination of the diabetic and gouty diathesis producing an excretion of sugar in the urine that can be treated and relieved.

My experience is that so long as a man does not lose his weight and strength and keep up his general vigor, you may be well assured that your patient is in no imminent danger, and that the case is not one of diabetes mellitus, but a faulty tissue metabolism.

Third, gouty or uric acid. One has said: "Despite the most diligent chemical analysis, the most ingenious physiological experiments, in spite of the most searching pathological examinations and the most careful clinical observations, the original starting point of these three diatheses are to-day a matter of conjecture."

In the face of these facts, we are well assured that in the last two conditions we have to contend with true chemical and physiological toxics which circulate in the blood. No matter where they are originally formed, if in excess do interfere with the nutrition of the cells and disturb the proper functions of the different organs which they reach through the blood current, clogging the biliary and elementary tracts and disturbing in fact all the internal organs.

With these facts and experiments before us, we are forced to the conclusion that in this form of faulty metabolism that the errors come through the inability of the digestive system to properly digest and assimilate the proteid element of the

food; that there are chronic constitutional disorders of malassimilation of which the local affections are secondary and more or less accidental manifestations; that the blood is charged to excess with lithic or uric acid, especially their alkalies, namely, lithates and urates of soda, diminishing its alkalinity. This abnormal condition of the blood produces a great number of symptoms which are directly dependent upon toxic influences of the acids and their salts, which quickly disappear as soon as the blood is freed from these excesses.

Now, gentlemen, if all this be true, and I confess to you that I do believe to-day that these facts are in the main true, that we are confronted with the reasonable conclusion that the great majority of all the ills to the human race, and especially to our own American people, are due to these toxic excesses in the blood.

One has said: "Not only atrophic and hypertrophic cirrhosis of the liver, the gall-stones, the nephitic disturbances and dyspepsia, atony of the intestinal tract, gouty sciatica, lumbago, sluggishness and inactivity of the villi, causing constipation or fermental diarrhœa, etc., but also the fluctuant pains in the body, not only the outspoken toe gout, but also many disturbances of the bronchial tubes, larynx and pharynx, the eye, the ear, the skin and many others. Even the teeth, as in alveolaris pyorrhœa."

To come to anything like a just conclusion of this subject, it is necessary to discuss some of the theories advanced. First, the uric acid theory of Haig. Now, I am forced to admit that in these conditions there is an excess of uric acid in the blood, but in studying this acid we find that it is a very soluble acid, in fact one of the most soluble of all the acids. This being the case, it should and is readily excreted from the system by the kidneys. I think that Dr. Haigh has allowed his pendulum to swing too far, as is often the case, and attributed too much to uric acid alone as the cause of all these conditions that we find in gouty metabolism. There are other chemical

conditions in the blood, with this excess of uric acid, both there by and through the fault of a mechanism in the system by which a safe excretion does not occur and these chemical toxic agencies unite for harm. Where and how all this takes place is the mystery that the future must solve for us.

Now, gentlemen, when we stop and think and realize the fact that the liver is the one organ that all digestives pass through on their way to feed the cells; that it is the storehouse of all insoluble glycogen and carbon hydrates and supplies the blood and hence the tissues through the cells with grape sugar, and in fact all substances as albumin, bile, acids, phosphorus and urine, etc., not only this but an organ of secretion, the true chemist of our organism, rendering innocuous all hurtful substances and sending them out of our organism through the intestinal canal, and dishing out to the system the necessary elements for cell life and tissue upbuilding; that when our daily indiscretions in eat and drink forces upon the liver tenfold more than it can care for, I am forced to the conclusion that here in the main is the seat and cause for most of the conditions that will establish such a diathesis.

In writing this paper I want to acknowledge my indebtedness to Drs. Chapin, Osler, Boas and Nothnagel.

Chemistry in Medical Schools.

BY WM. J. MARTIN, M.D., PH. D., DAVIDSON, N. C.

Some fifteen years ago, when a medical student, I was surprised to find that the subject of chemistry was generally (there are exceptions to all rules) considered of small importance in its relation to medicine and as compared to what were considered the more purely medical branches. This idea, I found, was quite general among practitioners and students and was to be even found among the instructors of medical institutions, amounting in many cases to contempt for the branch. Fifteen years of teaching chemistry in medical schools has shown me more of this spirit, and has placed it in rather a peculiar light. This attitude of disregard and contempt has not entirely died out, though I do believe it grows less as the years go by, and many practitioners still, by active and passive suggestion, tutor the medical student to fret over the time given to the subject in their course, and to ask the irritable question, "What is the good of chemistry to a doctor, anyway?"

I said this spirit among medical men appeared to me in a peculiar light, for I have found repeatedly in the same person a profound theoretic respect for chemistry and its importance to medicine, and an equally profound practical disregard of its claims on himself and contempt for its use.

The limits of this paper will not permit me to enter into a discussion of the importance of chemistry to medicine, either historically considered or as to the important part it is playing or will play in the future development of medicine; that subject deserves a paper devoted to its consideration alone, and a study of it would possibly engender a feeling of respect and gratitude for past influence, and enthusiasm over its work in the future. It is possibly more pertinent to our present task to suggest the causes of the present and past indifference and disregard of chemistry by the medical man.

I know that chemistry may well be called a daughter of medicine, but medicine has many daughters that to the eye and sentiment have appealed so strongly that the "plain child" has affectionately but decidedly been pushed to the background, where for decades, centuries almost, she has been quietly but effectively transforming the indifferent parent, content to be the "handy girl," the crutch and cane, the footstool and the grindstone of the more favored daughters, herself too shy to demand her proper position either in school or association. But the silent forces have been at work, and Chemistry is coming, as she has every right to come, to take her place among the fairest and most favored of the family.

If the older physician will recall his course of medical training in his old medical school, he may remember the meagerness and real inefficiency of the chemical teaching, though here again there are notable exceptions and ones deserving of double honor because of the conditions under which the work was done. Often the professor, a busy practitioner, with no other chemical training than he received in his medical school, accepts the position of "Professor of Chemistry," because he is obliging or because it is the last resort; for some one has to take it, and he will, rather than not secure a place on the faculty staff. If the school does him the favor of providing him a lecture-room—and often only the use of one in common with others,—it reaches the limits of its generosity or regard for the subject and leaves the professor to shape and conduct his course as best he may, with the result that he has to provide his own apparatus and supplies, the latter possibly covered, *in part,* by a small and insufficient fee from the unwilling student. Naturally, under these conditions, the outlay of time and money is extremely limited and the professor considers that he has given a sufficient *quid pro quo* for his enrollment in the faculty. The course is correspondingly meagre and unsatisfactory. Two or three hours of lecture a week, with a little experimentation by the teacher thrown in, the first few months consumed in a scanty course

on Physics, fills the course out for the first year of the college work and completes the student's labors in Chemistry. The professor disgusted, the other instructors indifferent or amused, the students contemptuous, is a picture of Chemistry in many medical schools during the past century, and not so early in the century but that there be some yet left old enough to recall it.

Is it any wonder that physicians trained under such conditions, have handed down a feeling of contempt for the position of Chemistry among the medical branches? Is it any wonder that Chemistry's progress to a surer and better footing in the course, has been slow, and laborious and, at times, discouraging? Is it remarkable that for so many years after she was eminently worthy of an honorable position she has had to fight and fight hard against the contempt, indifference, and "higher claims" of other branches? And yet she has done it, is doing it, while, almost unconsciously to the other branches, she has been furnishing them the life-blood for their development and growth. Study the catalogues of the last quarter of a century, yes, of the last decade, and you will see a slow but increasingly rapid and sure relative progress—a steady, persistent advance to a position of greater dignity and acknowledged importance among the circle of medical studies.

Examining the recent catalogues of some fourteen medical institutions, which might be classed as good, bad and indifferent, I find that about an average of one hundred and fifteen hours of lecture and quiz and about one hundred and thirty hours of student laboratory work in chemistry is required of the medical student during the first two years of his college course. If you will notice the names of the teachers in these courses you will find many who have given their most serious attention to this branch, many who have not regarded it as a side issue in their life, but as their life-work, and who have prepared themselves by thorough training in our foremost universities. Such a comparison is encouraging, and points to greater things in the future—for Chemistry has not yet come to her own in medical preparation.

I do not ask you to listen to an ideal as pictured by a "professional chemist," but I do believe that the time is rapidly coming when the mass of medical men will understand that a clear and practical knowledge of the principles and facts of chemical science, not simply of elementary nature but in its higher forms as well, is necessary to every well-equipped, thorough practitioner. The day of "Empiricism" is waning, and that of "Rational Medicine" is waxing, and Chemistry is playing no unimportant part in the change. The physician must know "why" as well as "what," and without an intelligent appreciation of chemistry, he often falls short of the *rationale* of his procedure. Fundamental as chemistry is to such branches as Materia Medica, Pharmacology, Physiology, it also reaches out and vitally touches such others as Bacteriology and Biology, and even Surgery and Practice. Many have found that a clear knowledge of the science of chemistry has elucidated and illumined much of later teaching that would otherwise have been meaningless and but memory work.

I know that the demands on the student's time are already great and growing greater; I know that every teacher is jealous of another encroaching on the time he thinks properly belongs to his department—what teacher is not?—I know that in planning a curriculum, as in most every thing else in this life, compromises and adjustments have to be made to get the best results under the conditions, and yet I believe that teachers of at least certain of the medical branches will agree that where a man comes to them well grounded in the principles and practice of Chemistry, a better grasp, a more intelligent comprehension of his subject is possible.

I realize that the problem which I bring to your attention is a difficult one, connected, as it undoubtedly is, with the old, much-discussed and never solved problem of better preparation for students of medicine. I do not think, however, that it will do any harm to face it once more, possibly in somewhat of a specialized form. Mark you, I do not claim, nor do I

think, that a solution of this problem will prove a panacea for all the perplexing questions of a medical education. It is a perplexity with too many facets to it for that. But I do suppose that even a *partial* solution will help in the general cause. What we want, what we need, is not to *unduly* emphasize any branch or study, but to better prepare our students to be thoughtful, intelligent, *rational* practitioners. We need more of that kind; we have enough, and will continue to have enough, of those who practice by the plan of "rule of thumb," or adopt a new prescription because they see it in their medical journal. Now, I believe that, if we can raise our standard of requirements for entrance into our medical colleges sufficiently, and re-arrange our chemical course in these colleges to such an extent that a thorough course in Chemistry can be had by the close of the first year, much will have been done to make the acquirement and teaching of a great deal of the after-work easier and more satisfactory. It may be remarked that a previous college course leading to the degree of A.B., in which this branch and other scientific branches are included, will be the remedy. That is undoubtedly true; but the fact is that the time when we can make such a general rule has probably not yet arrived. It is a noteworthy fact, though, that for one institution at least of our country that is true, and several others are almost in line with it, and others will yet follow. What I suggest now, however, is that a general move be made in all our medical colleges towards the adoption of a requirement that *all* candidates for admission shall have had at least two years of didactic and laboratory training in General, Analytic, and Organic Chemistry, and one year of similar training in Physics. This will mean not only an unburdening of the medical course by so much, but a much better mental preparation for the severe drill of the higher course. Then let so much time be allowed in the first year of the medical course as is necessary to give a thorough didactic and laboratory course in Medical and Physiological Chemistry. Then in physi-

ology let the students of the first year only be required to master the simpler principles and facts, reserving till the second year, and *after the completion of medical and physiological chemistry,* the study of that physiology which so largely depends on chemistry and which can only be mastered after a knowledge of that subject has been acquired.

You can not effectively teach Physics, Inorganic, Organic, Analytic, Medical and Physiological Chemistry in one hundred and fifteen hours of lecture work and one hundred and thirty hours of laboratory work. To the beginner, Chemistry introduces a decidedly new set of ideas, and it requires time to digest as well as to devour them. You can not open the mind of the student who has had no preliminary scientific training, and pour into it immense hoppers of chemical lore, facts and principles, without resulting mental dyspepsia and nausea. The anaconda swallows the ox whole it may be, but he then takes weeks to digest before another meal is taken. Medical students are not anacondas, nor, after large doses of, to most of them, difficult digestible Chemistry, are they allowed many hours of leisure for rest and mental digestion, but are crowded with hard work in all their branches. The result is, as both student and teacher later finds, that not only has the chemical meal not been digested, but has been rather completely thrown out by a very simple physiological process!

Furthermore, the student needs the knowledge and skill acquired in his medical course before he attempts his Materia Medica, Bacteriology and Physiology. The "cart before the horse" principle is as unsound in teaching as in hauling, and to teach Organic and Physiolological Chemistry *after* Physiology is according to this principle. And, then, too, the rush and meagerness of the courses in Chemistry in most of our medical schools, necessitated by their being crowded into such small time limits, largely serves only to bewilder and discourage the average student. Chemistry does not become, as it ought to and is capable of, a really useful part of the student's armamentarium for attacking the overlying branches.

This suggestion for change in requirements and arrangement of the course is not ideal, certainly not from my standpoint; but advancement must nearly always be made by steps, and I believe we would find this a step in the right direction. Some may think it too long a step to take at once, others may think it is not radical enough; it is simply my opinion that anything more is not practical at this time, however much we may desire it, and it is also my opinion that if decidedly backed by the State Boards, the most of the colleges would see their way clear to its adoption. Many of us can remember when the establishment of the principle of examination by the State Boards raised a great hue-and-cry among a number of colleges, calling aloud dire prophesies of resulting dearth of students and scarcity of doctors. The same cry would doubtless be raised again in certain quarters, but with no more success than before, and I believe there would be fewer of them. Once taken, this step would inevitably lead to a three-fold good—better preparation of the student for his most important and gravely responsible life-work; greater satisfaction to the hard-worked teachers of these students, whose ambition is that they should go out from their class-rooms and laboratories better prepared to wage their fight with disease and death: and, finally, greater benefit and blessing to the public, who look to us to do well-nigh impossible cures. Fewer doctors it possibly may mean for a few years, but it also means better ones, and, in this profession, it certainly is quality and not quantity that counts for most. Really I do not believe it will mean fewer permanent practitioners. We all know how, after graduation, they are weeded out from one cause or another till it has ceased to attract more than passing notice to find men who are entitled to write themselves Doctors of Medicine active in other walks of life and giving up medicine altogether. The weeding-out process has just been shifted by this arrangement I propose to the beginning of the course rather than to the end; more of the matriculates will continue the four years through and gradu-

ate, and after graduation a less proportion will seek other fields of labor. Now, do not understand me to argue that *all* this will follow *simply* because of better preparation in *Chemistry;* I may be an enthusiast, but not to that extent; but with the two years of preparation in science, required before entrance into the medical school, will necessarily come better preparation in English (what a host of our students need that let those who look over examination papers testify!), probably one year at least of Latin, certainly in this time there ought to be enough mathematics to do carefully and accurately the little calculation that a physician often has to do; in fine, there will be a decidedly better mental preparation all around for the arduous tasks of the medical course. Some may say that this is the "nigger in the woodpile," and that I am simply arguing for higher requirements for entrance. I have no desire to find fault with that view of the case. But if my branch gives me a text to lay the argument on, so much the better. It *is not* what I started out to do, but if done I trust it is not done with total inefficiency. My desire was and is that this branch might be brought to do for the medical man what I believe it is capable of doing, and which it now is prevented largely from doing, by being so crowded in time and misplaced in its position in the course. If it leads to a discussion of the larger and more general question of higher requirements for entrance, I shall rejoice. Certainly, if it might lead to some practical result which would be for the good of the profession I should be highly gratified.

Physical Therapeutics.

BY J. C. WALTON, M.D., CHASE CITY, VA.

In the short time at my disposal it will be impossible for me to more than call your attention briefly to this most important branch of therapeutics; and this paper is more a plea for than an exposition on the subject.

In the Spring of 1902, I introduced a resolution before the North Carolina State Board of Medical Examiners urging upon medical colleges the importance of adding this branch of therapeutics to the curriculum. Unfortunately, the average medical student is so imbued with the cutting mania that very little interests him outside of the operating amphitheatre. At the New York post-graduate hospital I have frequently observed that there would not be standing room in the operating amphitheatre, while a master of hydrotherapy like Baruch, or Morton in electro therapy would hardly have a corporal's guard to hear them lecture on a practical subject that would be of the utmost practical benefit to the busy doctor every day of his life. For the relief of many chronic diseases non-surgical the tendency is away from drugs, and those distinctly surgical, the tendency is away from the knife. I will refer briefly to only a few of the most important physical agents, viz., hydrotherapy, phototherapy and electricity.

HYDROTHERAPY.

To those interested in this important and neglected branch of therapeutics, I refer to my paper on hydrotherapy at the Hot Springs meeting in 1903. It is to be regretted that the charlatan and the quack have usurped this field, owing to the unwillingness of the profession to accord to it the recognition it so justly merits, and to apply to its application the same rules of precision and accuracy that they do to other branches of medicine; for hydrotherapy, like other medicinal agents, should be used intelligently, with the greatest care and precision and minutest attention to every detail.

Water is a very flexible agent, and can be used at temperatures ranging from 40 to 110 degrees, and as a change of 5 degrees in temperature makes a marked difference in its effect, it is apparent what an enormous attitude is offered us for grading the effect on the human system. The effects of water are due chiefly to its thermic and mechanical action, and its irritating effects on the neuro-vascular cutaneous system. In institutions equipped with a Baruch system of baths, which gives the operator perfect control of the temperture, pressure, duration, etc., it is absolutely surprising what results can be obtained in the whole domain of pathology, its effects being tonic, eliminative and alterative. An ideal remedy when intelligently used, and is far ahead of drug medication as an electric light is of a tallow candle.

PHOTOTHERAPY, OR LIGHT THERAPY.

This comparatively new agent has made wonderful progress in the last decade, but it is only a recent discovery that light contains chemical as well as heat rays; there being invisible rays at both ends of the spectrum; those beyond the red are the heat rays, while those beyond the violet are chemical rays, and stimulate the development of chlorophyl in plants and hæmoglobin in the blood of animals by increasing the oxidation process in the cells. The composition of the sepctrum of light is practically the same whether its source be the sun or an artificial one. This is very important from a therapeutic standpoint, as sunlight is not always available, and the electric light, both incandescent and arc, is preferable to sunlight, since it contains relatively a greater number of ultra-violet or chemical rays, especially the arc light; the incandescent being used principally for their heat-producing effect. It is a humiliating fact to admit that through all the ages that we are just awakening to the importance of light as a therapeutic agent, especially as a remedy against that scourge of the human family, tuberculosis. I have listened to innumerable discussions before this body as to the value of this or that drug in tuberculosis according to the then

prevailing fad, only to find it replaced by another equally as good at the next annual meeting. Visiting some time ago one of the leading and best-conducted tubercular sanitariums in this country, the physician in charge—a noted specialist—tersely summed up his treatment as follows: Life in the open air with an abundance of sunshine and fresh air, plenty of good nutritious food, at least three square meals a day, the Baruch and static baths for their demonstrably proven effects by counting the cells before and after treatment in restoring and increasing the hemoglobin and blood cells. All other apparatus and devices having been relegated to the garret. Electric light is nearly always available. Their rays being richer in actinic power than sunlight, they are not expensive, and I would suggest their use in all sanitariums for the treatment of tuberculosis and other chronic diseases. It has been demonstrated that the tubercle-bacilli, plague bacilli, splenic fever spores, tetanus germs, etc., etc., are promptly destroyed by exposure to sun or electric light; and that the removal of poisonous materials, including bacteria, is hastened by increasing the eliminations. Koch was the first to recognize the destructive influence of sunlight on bacteria, and Finsen later discovered that the ultra-violet rays would destroy the tubercle-bacilli in lupus of the face and that healing with but little scarring followed its use, and to him we are indebted for the foundation of phototherapy. Finsen in 1898 treated small-pox with red light, and found that patients thus treated recovered without pitting or scarring, and further demonstrated that light could be used apart from heat, the heat rays being eliminated with screens, running water, etc., and that cold light was frequently as effective a therapeutic agent as light from which the heat had not been abstracted. It was also demonstrated that light will penetrate and pass through the body, certain rays being absorbed by the tissues, the others passing through and out. The more transparent to light the upper layers of tissue, the more intense its effect on the deeper layers, and all the internal

organs are accessible to the influence of light, especially to the actinic rays. The general light bath to which the whole body is exposed, the head outside, is a cabinet finished in enamel paint, with a number of 16 candle power incandescent lamps with two or more arc lights up to 1,000 candle power. The temperature of the cabinet being regulated by increasing or diminishing the number of electric lights. The light treatment has been found beneficial in a great variety of treatments, including rheumatism, neurasthenia, chronic skin and parasitic diseases, anemia, tuberculosis and all conditions of faulty metabolism. The arc light is used in conjunction with the X-ray treatment to prevent dermatitis and burns.

Morton claims by artificially producing fluorescence in the human organism that the effects of the X-ray are made more deep and penetrating, and its therapeutic effects very much enhanced; and frequently cures cases that failed on X-ray treatment alone. Morton's method consists in saturating the system with a medicine endowed with the property of fluorescence or phosphorescence, and then submitting the patients to the action of the X-ray, or radium radiation, or of high-frequency currents. The object being to develop light within the tissue. In the confidence that the well-known effects of this agency might be duplicated internally and thus exert specialized effects, he well says "that in science it seldom happens that ultimate truth is arrived at all at once."

Dr. Henry Bence Jones made the remarkable discovery that man and all animals possess in every part of their bodies a fluorescence substance resembling quinine, and named it animal quinoidine. Dr. Rhoads and Dr. Pepper confirmed these experiments, and advanced the original idea, based on blood examinations in a number of cases, that a close connection existed between the diminution of animal quinoidine and malarial diseases. They therefore gave quinine to increase the fluorescence of the tissues to its normal point. It is

well established that quinine solutions, when subjected to light, exert a deadly effect on some micro-organisms. Fluorescence, then, is the property which substances have of absorbing visible or invisible rays and giving out visible rays. Sunlight, electric discharges, ultra-violet light, the roentgen, and becquerel rays, all exicte fluorescence and phosphorescence. Morton believes that the effects of the X-ray may be due to the fluorescence of the tissues themselves. His combined treatment is the X-ray, or radium radio active water, and fluorescent fluids, and regards fluorescence as essential if one is to obtain the best results in the treatment of cancer, lupus, tuberculosis, hodgkins disease, eczema, psorasis, etc. To produce fluorescence, administer from 5 to 15 grains of bi-sulphate daily, according to psycological tolerance.

ELECTRICITY.

The prevailing prejudice against the therapeutic employment of electricity arises chiefly from the indifferent attention paid to it by the medical colleges; an attempt to use it with out proper knowledge and training, and a consequent failure resulting therefrom; failure from inefficient apparatus, and prejudice created by its employment by quacks. The great improvement in the quality of apparatus and the progressive growth of knowledge of its practical application to therapeutics during the last few years has placed the science upon a plane in medicine equal to that occupied by electricity in the arts and sciences. The science of electricity in all spheres is an exact science; its laws of action unvarying; a method treatment or clinical results once demonstrated, it is always possible to duplicate the result in a similar case. Given a correct diagnosis in a condition in which it is indicated, we are never more certain of the prognosis than when applying electricity in an intelligent and technical manner. In therapeutics we must consider the two features of each electrical current, the amper, or current flow, and the voltage, or tension of the current. Nothing is more unscientific to speak of electricity from any source as

being comparable in its action to a current from another source. The common expression, "I have tried electricity," to the informed physician is meaningless unless the peculiar technique and modality employed has been described. The galvanic or continuous current is usually employed as a chemical agent for minor surgical procedures for electrolysis to promote absorption, as in strictures, and the massive method of mecuric cataphorosis of Massey as employed in the treatment of malignant tumors. Personal experience has thoroughly convinced the writer that more satisfactory results can be obtained from the static machine than from all other electrical sources combined. Of the various actions of these currents of high potential, the first and most important of all is the induction of muscular and tissue contraction or vibration, influencing the removal of local stasis and restoring circulatory drainage and the normal processes in regions where stasis exists. Second, the relief of pain and reflex irritation due to the removal of stasis and congestion. Third, the relief of muscular spasm. Fourth, an acceleration of local metabolism. The efficiency of the various electrical currents in overcoming local stasis and passive hyperemia are relative to their capacity to penetrate the tissues with the additional quality of the current by which it induces contraction without reference to the stimulation or motor points. In other words, the current which most effectively influences local stasis is a current of high potention and a moderate rate of frequency applied in as close contact as possible with the tissues which are in a state of congestion. The action, then, of the current is to produce periods of fibrillary contraction interrupted by short periods of rest, charge and discharge.

High frequency renders a current impotent to the induction in tissues of muscular contraction, except of a character which is entirely imperceptible and relatively inefficient for the purpose of relieving the grosser conditions of local stasis. For such an action an energetic force is demanded, a vis ater-

go; a current of lower frequency, other things being equal, renders the amplitude of the discharge capable of penetrating into the deeper tissues involved in a congested process, thereby overcoming the condition which acts as a bar to recovery—an induration for which nature has but feebly provided a means for removal. No measure has proven so valuable in my experience in the treatment of these conditions as the static wave current (above described), applied directly over the local conditions, followed by the brush discharge or spark when indicated.

Snow has demonstrated that in the earliest stages of acute inflammatory affections due to local infections, such as abscesses, boils, tonsilitis, etc., that the processes will be aborted by the early application of the proper electrical modalities; the action being due not only to the removal of local stasis, but also to the induction of a more active local phagocytosis, which disposes of the infectious element, thereby relieving the tissues.

I regret that lack of time prevents my reporting a number of cases of acute and chronic sciatica, chronic prostatitis, asthma, neurasthenia, insomnia, rheumatism, gout, and a variety of nervous and painful conditions which were relieved by the application of the wave current, brush discharge and sparks.

Writer acknowledges his indebtedness to Dr. Simon Baruch, N. Y. City; Dr. Wm. James Morton, N. Y. City; Dr. Margaret A. Cleanet, N. Y. City; Dr. Wm. Benham Snow, N. Y. City; Journal of Advanced Therapeutics, N. Y. City.

Neurasthenia.

BY J. THOMAS WRIGHT, M.D., WINSTON, N. C.

Neurasthenia is a rather comprehensive term, derived from the Greek "neuron"—nerve, and "asthenia"—exhaustion or weakness, and covers a variety of functional disturbances of the nervous system, with great irritation, and lowered vitality.

It is due to a variety of causes, chief among which are the strenuous life, excesses of various kinds, overwork and worry. Neurasthenia, also, is often a result of other diseases, such as influenza, typhoid, syphilitis, alcoholism, or chronic narcotism, surgical operations, anæmia, shock, injuries, autointoxication, impaired metabolism, and in women menstrual or other troubles of the generative organs, such as prolapsus, lacerations, the menopause, etc. In males, prostatitis and masturbation are causative factors.

Most authors acknowledge that heredity plays an important role by endowing the individual with a neuropathic tendency, and point to the progeny of tubercular, alcoholic or syphilitic parents as proof.

There is a close relationship between neurasthenia and the sexual function.

Neurasthenia usually occurs between the ages of 15 and 45.

SYMPTOMS.

Great fatigue, mental and physical, occasioned by the least exertion of body or mind, general irritability of the whole nervous system, with vagaries of any of the special senses, and intractable insomnia, are the more pronounced symptoms.

The mind is irritable and apprehensive, and there is a loss of memory. Curious and interesting mental perversions are frequent, and melancholia is often pronounced.

The reflexes are heightened, and muscular tremors in the extremities are seen. The spine is nearly always sensitive,

and back-ache is a persistent symptom. The urinary secretion is generally increased, the fluid being of a low specific gravity. There may be obstinate constipation, or a watery diarrhœa. Exhaustive sweats occur, and there is usually a coldness of the hands and feet—sometimes a subnormal temperature.

Tachycardia is a prominent symptom, and headaches are common. Anorexia is often pronounced. Hyperæsthesia of various parts of the body often occurs, and an interesting symptom, seen sometimes, is severe pain in the region of the appendix, simulating appendicitis. A sense of suffocation, throbbing of the arteries and vertigo are common symptoms. Vision is usually impaired. There is more or less sexual impotence.

PATHOLOGY.

There is a starvation of the nerve cells, due to deficient metabolism, with an accumulation of the waste products of the body, which enter the circulating medium, causing auto-intoxication, and irritation of the cortex, and through the nervous system an inhibition, or perversion, of the functions of various organs.

The body secretions are altered, the kidneys rarely throw off the solids like they should, and uric acid accumulates and adds to the irritability of the already quivering nerves.

The nutrition of the whole body is usually greatly impaired. There is evidently *deficient oxidation*—a point which should be remembered in the treatment. The absorption of toxines from the intestinal canal—caused by changes in the digestive juices, by imperfect digestion, fermentation, and by bacteria—constantly takes place, and is the chief cause in perpetuating the trouble.

One should remember, in studying functional nervous troubles, that severe mental strain, grief, great worry, or marked depression will alter or inhibit the secretions of a number of the organs of the human body.

Close study and clinical observation have led me to believe that the primary or essential causative factors in hysteria, neurasthenia and incipient insanity are closely allied and correlated.

PROGNOSIS.

While these cases are exceedingly hard to treat, still, with tact, persistence and care, and where there is no pronounced hereditary taint, the prognosis is usually good, with thorough treatment.

TREATMENT.

First of all treat and *remove the cause;* then with nutrition rebuild the impoverished and wasted nerve cells, and induce to activity all the various functionating cells of the body. Yet, treatment must be not only of the body, but of the patient's mind as well. This may partly be accomplished by pleasant surroundings, by cheerful companionship, by music and by outdoor games, drives and other diversions, as the patient improves.

It is well to remember that, in this disease, we have more or less degenerative changes occurring in the nerve cells, admittedly due to irritation and starvation—no matter what the primary cause may have been—and a loss of tonus, with a perversion of certain functionating cells.

Just what changes take place in the internal secretions, or the role they play in this trouble, is not known. We do know, however, that the whole human economy becomes erratic, and that there is apparently a pathological reciprocity between the sensitive brain and the whole perverted and diseased digestive tract.

Physical exercise, or work, is necessary to the proper performance of the functions of the body—a fact that escapes most people—as it increases respiration, circulation, oxidation and elimination; hence, exercise, graduated from passive to the most active, is of the utmost importance in the treatment of neurasthenia.

That the waves of sunlight have a powerful curative influence in the treatment of disease, is recognized, and should be used in the treatment of all cases of neurasthenia—sun-baths being especially beneficial. As soon as possible, patients should be kept in the open air, where the oxygen, so necessary, may be obtained in sufficient quantities.

The patient must make every effort to get well, for this is a disease where self-help is of the utmost value.

Cases due to alcoholism, or chronic narcotism, should be treated for those habits and their baneful influence removed. In women where the disease is due to lacerations, mal-positions, etc., surgical intervention should be insisted upon, as a cure is impossible so long as the primary cause exists.

Persons who have suffered with neurasthenia, should for some time live the "simple life," and avoid the rush, noise and worry incident to city life; should be careful and moderate in their diet, should avoid excesses of any kind, have regular habits, and should take plenty of exercise in the open.

The patient should have sleep—and plenty of it. At the beginning of the treatment he must have *absolute rest*—mental and physical. Massage in the morning, followed by a sponge bath and an alcohol rub, are very invigorating and should be employed. Later, as the patient improves, he should be given the cold douche. Electricity in the form of the static, or mild faradic current, applied particularly over the spine, soothes the nerves and aids the cure by stimulating cellular activity.

Weir Mitchell's system of treatment may be used in the worst cases. High irrigation of the colon is useful in suitable cases. Both the hot and cold pack are very beneficial, used according to indications; the hot pack being one of our best remedies for the intractable insomnia which is present in these cases.

As hypernutrition is an end sought for, the patient should be fed often on easily digested, or predigested liquid food. Milk, egg albumen, meat soups and panopapton, or liquid

peptonoids, should be used at the beginning, followed by more solid food as the digestion and general condition improve. Fruit juices are also of much benefit.

All the eliminating organs must be kept active by appropriate remedies. This is one disease where suggestion—either simple or hypnotic—often gives most brilliant results; but it must be used tactfully.

A mild but invigorating climate, change of scenery, sea baths, or a sea voyage, are all of great utility in the treatment of neurasthenia.

As to drugs, I find the glycero-phosphate of calcium and strychnia nitrate to be the best builders, while the compound of syrup of hypophosphites is a close second. I give the glycero-phosphate in three grain doses.

It is well to give a good mercurial purge at the beginning of the treatment, and the bowels afterward should be kept open by laxatives. Phosphate of soda and cascara are excellent for that purpose. Where there is much gastric irritation or catarrh, lavage with the stomach tube should be employed. The nitrate of silver pill (one-eighth grain) may be used for the same trouble. Iron and arsenic may be given with benefit—the peptonated preparations or iron being best.

Salicyiate of soda, or some of the laxative lithia salts, may be used to eliminate the uric acid and to relieve pain. Somnos and trional are perhaps the best hypnotics to give, when their use is absolutely necessary.

Patience and perseverance are necessary to obtain results. I may add that I have found the sulpho-carbolates and creosote to give efficient service in the fermentotion and diarrhea incident to this disease.

Modification of Cows Milk in Infant Feeding.

BY CHARLES ROBERSON, M.D., GREENSBORO, N. C.

The most difficult problem confronted by the physician in the artificial feeding of infants and the goal toward which we have all been striving, is the preparation of a food as nearly as possible identical with breast milk. Until recent years all the research has been carried on from a chemical standpoint, the object being to prepare a food in which the fats, carbohydrates, proteids, mineral matter and water were in the same chemical proportions as in mothers' milk. But practical results, as well as further study, have proven that a chemical likeness, while very necessary, is not alone sufficient. For example: we might prepare an artificial food that would contain the identical percentage of fat, but this would not be the butter fat of breast milk, nor would it behave in the stomach in the same way. The proteids, too, might be chemically correct, but while ham, lean beef, white of egg, etc., are all proteids, it requires no argument to prove that these proteids would not suit an infant's digestion. The chemical knowledge of food and their values, however, has become very much more accurate within recent years, and the differences between the proteids of cow milk and breast milk have been much more definitely estimated, and the manner in which they combine with the juices of the stomach, to form curds, more thoroughly understood. Modern chemistry has also taught us the differences in the emulsions of butter fats when separated by gravity and by the centrifuge and the superiority of the former over the latter. But the greatest value of chemistry in infant feeding has been to teach us the percentages of each ingredient necessary for proper nourisment, and the curding properties of different proteids. Along with the advance in the chemical knowledge of milk has come a clearer insight into its physiologi-

cal properties and its importance in teaching us that each animal requires food suited to its own peculiar needs. So the subject of infant feeding divides itself into two distinct propositions; a substitute for mothers' milk must be identical with it, first; from a chemical standpoint, and second; from a physiological standpoint. To meet the first requirement it must contain fat, carbohydrates, proteids, mineral matter and water in the proper proportions to nourish the infant, and second it must not only nourish the infant, but must be of such character as to develop its digestive organs. It naturally follows that a food whose chemical formula is identical with mothers' milk will not suffice, for the reason that the ingredients would not act in the infant's stomach in the same manner as does breast milk.

We have found from clinical experience that milk is the best food for infants, because the proteids of milk act in a peculiar way to develop the digestive tract. Hence we are led to believe that the most important consideration in supplying food to an infant is its physiological property, that is, the power to develop the stomach of the growing child. We know that an infant at birth has practically no stomach, but a straight tube through which the milk passes rapidly into the intestines. In such a stomach very little digestion takes place, so the mother provides colostrum, which is intended to start the digestive functions and to develop the muscular action of the stomach, causing it to pass the contents on into the intestines where it is rapidly assimilated and also causes evacuation of their contents. Within a few days the secretion of the milk proper begins, and at the same time, the stomach becomes able to act on a part of the proteid by the rennet which is secreted at this stage in the stomach's growth. As there is no hydrochloric acid present as yet, the curd of the rennet is passed on into the intestines, thus increasing the muscular power of the stomach. The next step in the development is the secretion of hydro-

chloric acid and pepsin which begins in very small quantities. Pepsin will not act on the curd produced by the rennet, until it has first combined with the hydrochloric acid, so as soon as the acid cells become functional the acid is poured out, the combination between it and the curd takes place and then the action of the pepsin begins. From this point in the infant's life, the stomach begins to grow larger and stronger, and begins to retain the milk for a longer time in order to give the juices sufficient time to complete their part of the digestion. Hence the intervals between feedings become longer and longer as more acid and pepsin are secreted. A study of the milk from different animals has taught us that the proteid in each kind of milk varies according to the needs of each particular animal, and combines with the acid and rennet with different results. Nature has provided that the proteid shall form curds of such character as will suit the digestive tract of the animal it is intended to nourish and develop. For instance, mare's milk form a curd that is soft and gelatinous, so that it will pass rapidly into the intestines where most of a colt's digestion takes place. Cow's milk forms a tough, leathery curds that stay in the stomach of the calf a long time, because its digestion is for the most part gastric. Mother's milk form a flakey, finely divided curd, which is partly digested in the stomach and completed in the intestines. Following this line of reasoning a little further we see that the food of each animal is developing the stomach of its own young to digest the food it must receive when it becomes an adult, for the soft, gelatinous curd of mare's milk corresponds to the grain eaten by the horse which is digested mainly in the intestines, which form 90 per cent of its digestive tract, and the tough, leathery curd of cow's milk corresponds to the hay of the cow's food and is digested mostly in the stomach, which forms 70 per cent of her digestive tract. From the foregoing we reach the conclusion that the value of chemistry in infant feeding is to ascertain the quantities of each ingredient of the food necessary to meet its requirements, and at the same time it is essen-

tial that the proteids shall be of such nature that they will combine with the rennet and acid to form curds that will develop the stomach from one that will digest only colostrum into one that will digest the finely chewed food of the adult.

Cow's milk is the only source of supply available, which contains a proteid that will meet these requirements. The proteid of cow's milk, if given as it is, however, will not suit an infant's rigestion, therefore, it must be altered by some means that will cause it to curd in finely divided particles or flakes such as breast milk forms. This can be accomplished by several methods. Each has much to be said in its favor, but I shall omit all except the one that has proven most successful in my hands. It is the dilution of cow's milk with the dextrinized gruels. Credit for its discovery is given to Dr. Henry Dwight Chapin, of the post graduate hospital of New York, who worked out the method and gave directions for its use in the nursery.

The gruel is prepared as follows: One ounce of barley, wheat or rice flour is added to a quart of water and boiled in a double boiler from one-half to an hour. It is then set aside to cool sufficiently to taste, when one teaspoonful of Cereo is added, and the gruel stirred for a few minutes until it becomes thin and watery. It is then strained and sweetened and a little salt added. Then it is poured into nursing bottles and kept on ice till ready for use. The dextrinized gruels are better than water and lime water, or any other diluent, because first it renders the curd of cow's milk flaculent and breaks it up into finely divided particles. Second, it adds to the food a certain amount of carbohydrates and proteid matter. Third, it promotes a natural secretion of gastric juice by its being partially digested as if by the saliva of the mouth. Fourth, it is easily and cheaply prepared. The Cereo, which is used to dextrinize these gruels is a diastase preparation, made expressly for this purpose by The Cereo Co., of Tappan, N. Y. When any cereal is boiled in water the starch grains swell up, the cellulose cover-

ing ruptures and the resultant fluid is a gelatinous starch water. The addition of diastase will convert this starch into dextrin and maltose very much as does the saliva in the mouth. This fact is proven by the addition of iodine solution to the gruel at different stages in the boiling. The blue color of iodine with starch gradually fades until it fails to react, showing that all the starch has been converted. Having settled on the milk and diluent, next comes the proper percentage of fat, carbohydrates and proteids required by infants under varying conditions. Good whole milk has been found to contain practically 4 per cent of each. Different investigators have found that the percentage of butter fat in different layers of cream after it has been allowed to rise will vary from 10 to 26 per cent, but that the milk dipped off to certain depths would yield fats of certain known and fairly constant percentages. For example: The top nine ounces of a good milk will contain 12 per cent of fat or three times whole milk; the top sixteen ounces, 8 per cent of fat or two times whole milk. The carbohydrates and proteids remain practically the same, so that in the top nine ounces we would have milk with a formula of 12-4-4. The method now in constant use by Dr. Chapin in the babies' wards of the post graduate hospital, and by Dr. Holt in the babies' hospital, is as follows: If we wish to prepare a food for a young infant with a high fat percentage and low proteid, we would dip off the top nine ounces from a quart bottle of milk with the Chapin dipper, one of which I show here. The milk is thoroughly mixed in a pitcher and will contain fats, carbohydrates and proteids in the formula of 12-4-4. Then dilute that with three parts of dextrinized gruel, and we would have the formula 3-1-1. By adding 5 per cent sugar or one part to 20 or 30 of food, we would have found the food suited to that infant, 3-6-1. If the infant is older and we want more proteid and less fat, take off the top sixteen ounces in which the fat is twice that of the whole milk and we have the formula

8-4-4. Now by diluting this with three parts of dextrinized gruel, we have a formula of 2 2-3, 1 1-3, 1 1-3, or with the sugar added 2 2-3, 6 1-2, 1 1-3, or we can take the top twenty ounces in which the formula is 6-4-4, and add equal parts of gruel when we will have a food of 3-2-2 with sugar added, 3-6-2. So you see the percentages may be altered to suit any conditions, and the proteids and fats can be made as high or as low as indicated by the condition of the infant to be fed.

A whole day's feeding should be prepared each morning, and placed in round, eight ounce, graduated nursing bottles. These should be lightly plugged with cotton and kept on ice at a temperature of 50 degrees or below. If the weather is very hot and the milk has a tendency to sour, it may be pasteurized or sterilized. By carefully following these directions much sickness among babies may be avoided; provided the milk supply is good.

This leads me to a point upon which I wish to lay especial emphasis. That is; the providing a purer milk upon which to feed our bottle babies. As we all know the most frequent cause of summer diarrhea is the presence of bacteria in the food, and by far the greatest per cent of these bacteria gain entrance into the body by means of the cow's milk upon which they are fed. The milk becomes contaminated either by the milkers, or by those who handle it at the dairy, by the vessels into which it is poured, or by those who bring it to market.

It is undoubtedly true that certain bacteria are salutary, but they are few in number, and when the bacterial count per cubic centimetre is large, it means that protogenic bacteria are present, and they are present because of the carelessness or ignorance of those who handle it. We can readily appreciate the fact that the greater the number of bacteria present, the more likely is the milk to be harmful, and the more liable is the baby who drinks it to be attacked with summer diarrhea. Now the practical point for us to con-

sider is—what can be done to render our milk supply more wholesome? For by that means only can we hope to protect our infants from the milk borne diseases. Cow's milk to be suitable for infant feeding should contain not less than four per cent of fats, about four per cent each of carbohydrates and proteids, and should be as free as possible from bacteria. In order to secure a milk that will contain 4 or 5 per cent of fats, it must be had from a good herd of cows, and in order to keep the bacterial count within a safe limit the greatest cleanliness must be practised.

In New York, where the greatest work has been done to purify the milk supply, it was found that the bacterial count per cubic centimetre often reached into the millions. Through the efforts of Dr. Chapin, there has been established a milk commission, whose duty it is to inspect all milk brought to the city, and this commission has issued a circular, a part of which I shall read.

"The Commission appointed by the Medical Society of the County of New York to aid in improving milk supply of New York City, invites the co-operation of the milk dealers and farmers in attaining that end. The sale of pure milk is of advantage to those furnishing it, as well as to those who use it. The commission has undertaken to assist both the consumer and the producer by fixing a standard of cleanliness and quality to which it can certify, and by giving information concerning the measures needful for obtaining that degree of purity. The most practicable standard of cleanliness in the handling and care of milk is its relative freedom from bacteria. The commission has tentatively fixed upon a maximum of 30,000 germs of all kinds per cubic centimetre of milk, which must not be exceeded in order to obtain the endorsement of the commission. This standard must be obtained solely by measures directed toward scrupulous cleanliness, proper cooling and prompt delivery. The milk certified by the commission must contain not less than four per cent of butter fat, on the average, and have all other characteristics of pure, wholesome milk."

In order to secure a milk that will reach this standard, certain things are necessary, among which are; first: The cows, milkers and barns must be scrupulously clean. Second: The containers must be steamed. Third: The milk must, immediately after milking, be cooled to 50 degrees and kept there till used. The dairymen will supply us with such milk just as soon as a demand is created for it.

The duty of the physician, in this case, seems to me clearly defined. He should carefully instruct the mothers and nurses as to the dangers of impure milk, and at the same time should point out the advantages and absolute necessity of a good, pure milk.

I should be glad to see a milk commission established by each County Society, whose duty it should be to inspect every dairy and its milk supply and make a weekly report to the department of health. Just as soon as the mothers realize the importance of clean milk in preventing the intestinal diseases of infants, the production of a certified milk becomes practicable. The laboratory of Hygiene was established for just such work as this, and now is our opportunity to prove to the people its usefulness. Certified milk would demand a higher price per quart than the milk we are now using, and the increased price would not only pay for the additional cost of production, but would yield sufficient profit to make it worth the dairyman's while.

I hope some man from each county, who hears this paper, will lay the burden on his own heart and go home with the determination of having his society elect a committee to carry this work to completion.

Malarial Hemoglobinuria—Black Water Fever, Hemorhagic Fever, Yellow Chills.

BY O. C. DANIELS, M.D., ORIENTAL, N. C.

DEFINITION: An infectious, non-contagious disease caused by the malarial plasmodium, characterized by an enlarged spleen, melanemia, jaundice, accelerated pulse, and a tendency to prostration and nervous symptoms, the following varieties will be described: Intermittent, remittent and pernicious.

ETIOLOGY: Authorities have not yet agreed as to the kind or kinds of malarial parasite present in this disease. I believe the parasite of this disease differs in no way from the parasite of the ordinary forms of malaria, viz., intermittent and remittent. I believe impure water through its action of the stomach and liver, associated with malaria germs, plays quite a causative factor; in other words, anything that decreases or stops the function of the liver. Quinine given by mouth by some is called causative factor. No doubt quinine given to a patient, in whom there are malaria germs, and with a liver that is scarcely acting, will produce this disease. But you can give all the quinine you wish if the liver is acting and not produce hemoglobinuria.

PATHOLOGY: Spleen is enlarged, sometimes tender, but differing in no way from the ordinary forms of malarial. The blood on microscopical examination, contained many parasites, hemoglobinan crystals, broken down blood cells, with a reduction of red blood cells. Hemoglobinuria occurs when there is such extensive disintegration of red cells that the liver is unable to transform the whole of the liberated hemoglobin into bilirubin. The liver is swollen, sometimes tender, and atonic. Jaundiced over the whole body. The urine contains very much hemoglobin and bile. And if the tubules of the kidney are lacerated by the hemoglobin passing through the kidney, there will be red cells present and some albumin, with acute nephritis.

Symptoms: Pernicious Variety: This variety is usually very abrupt with severe chills, headache, nausea and vomiting, high fever, backache, restlessness, very quick pulse, 120—160, jaundice very marked, peculiar odor, hemoglobin in the urine, and frequently total suppression. The patient, from the beginning, gets worse, becoming markedly prostrated or comatose, perishing in the first eighteen hours.

Remittent Variety: Patient usually giving history of having had chills the previous day or days, or having been in ill health. The attack is ushered in by chill which is distinct nausea and vomiting, which is usually very marked, vomiting principally bile, and the vomiting ceasing as soon as the bile is freed from the stomach, and bowels begin to act. Usually constipated. Fever 103—105, with distinct remission, headache, backache, and sometimes delirium. Pulse very quick and out of proportion to the fever, accelerated breathing. Some patients complain of shortness of breath. Jaundiced with very anxious look. May also be very nervous rolling from one side of the bed to the other. Spleen and liver enlarged, and sometimes tender. Urine full of hemoglobin. In this variety there is no regularity of the chills, may have one, two or three in twenty-four hours. Hemoglobin usually disappears in the urine in twenty-four to forty-eight hours, if the patient does not have second chill. But hemoglobin will appear in the urine twenty-four to forty-eight hours after they have last chill. In other words, each chill setting free hemoglobin.

Intermittent Variety: Patient giving history of having had chills previous days or weeks. Begins with a chill, which is frequently very slight, frequently not even going to bed. Fever to 102-104, some nausea and vomiting, headache, quick pulse, and continues so. Fever is soon followed by sweat and consequently a drop of the fever. Slightly jaundiced. Spleen and liver enlarged. Urine contains hemoglobin and bile. The hemoglobin usually disappears before the next chill, jaundice clears up considerable. All the symptoms will gradually disappear unless have a chill the second day which

will cause a repetition of the first day with increase of severity.

Complications: Gastritis, enteritis and nephritis.

Diagnosis: The diagnosis is very easy to anyone who has seen a case. The laity in our malarial district, I believe, can diagnose ninety per cent of the cases. And a physician who has ever seen a case should never make a mistake. The diagnostic symptoms are: chill, jaundice, accelerated pulse, and hemoglobin in the urine. These symptoms in a malarial district will never fail.

Prognosis: The information I can get about this disease in the past, lead me to believe that it was much more fatal formerly than now. The pernicious variety I have never seen, but would regard it as very fatal. The other two varieties I do not regard as being fatal. If a physician is summoned just after the first chill and does nothing except treat the symptoms and condition of the patient, he will save about 75 per cent under the treatment which I will tell you presently. I believe there should not be a mortality of more than 10 per cent.

Sequella: Chronic interstitial nephritis being the most important. Due to the hemoglobin crystals cutting the tubules of the kidney. Chronic endo carditis due to hemoglobin. Cirrhois of the liver, which may be caused by repeated attacks. Gastritis and enteritis which frequently give considerable.

Treatment: This to me, apart from the diagnosis, is the most important part of the subject. First, stop the progress of the disease, and second, put all the excretory organs to work throwing off all toxic material. To accomplish this, first, I give hypodermically 5-10 grains of quinine. As to giving quinine there are quite different views. One giving quinine by mouth, another giving it hypodermically, and another says he does equally as well or better, without giving any quinine. When I first began treating this disease I could not find any authenticated plan of treatment; so I began experimenting with quinine hypodermically. My

first patient recovered, and I have treated ten of my own cases since, all of which recovered, and I attribute it to the quinine given hypodermically, keeping off the second chill. In treating my first case, the hemoglobin disappeared in the urine in 48 hours. And after the urine had been clear about 5 days, I tried quinine by mouth, three grains every four hours with a return of the fever, from 99-6—103, with the appearance of hemoglobin in the urine which lasted about 18 hours. I at once stopped the quinine, gave a purgative, the fever immediately going down to 99-6. I then gave for three days 12 grains of quinine hypodermically, and it did not cause any hemoglobin to appear in the urine. My explanation of the difference in the action of quinine by mouth and hypodermically, is this: As I have told you before, the liver is functionating very improperly, and quinine given by mouth goes direct to the liver, causes the liver to functionate even more improperly. The last case of hemoglobinuria I treated was of the intermittent variety, and the mother had given the boy, who was 11 years old, 6 grains of calomel, so I gave the boy a dose of magnesium sulphate, and the two got the boy's liver to acting very nicely. I decided I would give him 1½ grains of quinine in an acid pepsin solution every three hours by mouth. The quinine acted very nicely in this case, because his liver was acting properly. If I always knew my patient's liver was acting properly I would not hesitate to give quinine by mouth. But in 90 per cent of the cases we are not able to get the liver to acting properly before another chill has come on, these are the cases that quinine hypodermically will cure. In giving quinine hypodermically, I usually give 5-10 grains every 6 hours so as to get in 20-24 grains before the next expected paroxysm. Then I reduce the quinine and give 12-16 grs. per day until the evening temperature is down to 100. I have also used inunction of quinine, also quinine and whiskey rubbed into the skin, both with good results. I have also used methylene blue, but it seemed to me my patient did better without it than with it, so I have discarded it altogether.

Salician I have used and do use some now. It is a stomachic tonic and diaphoretic and may have some anti-malarial properties; at least it will do no harm. Some physicians give spirits of turpentine, for its effect on the liver and kidneys. I have used it, but am unable to say whether it does any good or not.

As to the second indication, get all the excretory organs working to the utmost capacity. Give sodium phosphate, epsom or rochelle salts to open the bowels, and deplete the whole portal system. Then give calomel, one grain every hour for five doses, then in about 6 hours give another dose of one of the above salts. The salts should be repeated once or twice a day as indicated by the condition of the bowels and liver. Calomel can also be repeated as thought best by the physician.

To keep the kidneys acting I give acetate of potash 10 grains. Infusion of digitalis three drams, spirits of nitre one dram, every three hours. If the patient vomits so much that he cannot retain enough water, give high enemas of normal saline solution, and in extreme cases hypodermoclysis or intravenous injection of normal saline. Hot applications in the way of turpentine stupes over the region of the kidneys will do good.

The skin must be kept acting by giving tepid baths; followed by hot dry packs if necessary. When there is pronounced jaundice, hot packs will relieve that quicker than anything else.

Diet should not be considered the first two days only in exceptional circumstances. I prefer animal broths strained, peptonoids, oysters and crackers, milk and lime water after the vomiting has ceased.

During convalesence the diet should be gradually increased, put on a tonic containing strychnine, arsenic, iron, quinine, nitro-muriatic acid and pepsin. Give plenty of regular exercise, regular sleep, nutritious diet. See that the liver does not become inactive and there will be no more hemoglobinuria.

Quacks, Charlatans and Impostors.

BY C. E. REITZEL, M.D., YOUNGSVILLE, N. C.

The history of medecine is one replete with interest, full of characters of the noblest kind and mingled with those of the basest sort. Its origin is contemporaneous with that of civilization. The labors of the most progressive and profoundest students of the science have been neutralized to some extent by vicious quacks, in the pursuit of pecuniary emolument, although somewhat emphasized by the opposition of the superstitious. That impostors, charlatans and quacks have always been among us, is sadly but most abundantly proven by perusal of our criminal court reports. That they are present among us to-day is confirmed by a glance at any daily newspaper.

When we stop to think that it has taken four thousand years or more for medical science to attain its present high standard and prestige, we can more easily comprehend the universality of the grossest superstition. It is a known fact, that element known better to psychologists has never been entirely obliterated, for it still reigns supreme among the heathen, and even our own boasted civilized America is not wholly without it. Let us hope that this last assertion is not correct and that the idea comes from the simple fact (?) that "Americans like to be hum-bugged." Let either be true, as it may or neither, it is to be deplored we have those to deal with whose methods and intentions are questionable and should be brought to give account.

At different epochs from time immemorial, the practice of the "healing art" has gradually passed into possession of the priests almost exclusively, and has centered around the great capitols of the Orient. It was so in ancient Greece, at Alexandria, and it was so in Rome. It needs no argument to say there were no restrictions nor any requirements for the privilege, only profess a belief in a deity and to teach the pre-

cepts of some predominating sect. It is history that only to have studied at Alexandria, or even to have resided there, was sufficient to have entitled one to be proclaimed a physician.

The probable reason that the science drifted to the priests is that there has always been a belief among the ignorant and superstitious that disease is a chastisement from Divine source, rather than the effect of disobeying physical laws, hence their resort to prayers and expiation, especially when exhorted thereto by these apostles.

Are we to be censured when we declare that there is a parallel to be found to-day in CHRISTIAN SCIENCE, especially when we observe that they prosper only among the ignorant, superstitious or vicious?

The emperor, Anthony, the Pious, was the first to occupy himself, with regulating the practice of medicine. He granted certain immunities, but did ask for some proof of qualification. It seems the grossest effrontery for a body of men to come before any legislature and ask for protection in the practice of any occult science,—osteopathy. The healing art had no protection for nearly three thousand years or even more save the superstition than which no greater was needed.

Now, as medicine has done, let osteopathy and christian science prove themselves under the protection of ignorance and superstition for a reasonable time, as they are doing wonders only among that element, before they ask for protection by the State. It is a known fact that regular physicians have the privilege and have the injunction to practice anything that from their best judgment, after a careful training and study and observation, seems best and proper, whether it be medicines that eclectics or homeopaths are using or methods of procedure that the osteopaths and other impostors have usurped and are wanting patented for their personal benefit.

The enlightened medical profession of to-day makes use of all rational methods of healing, including suggestion,

manipulation, massage and electricity, water baths, (hot and cold) to give drugs or not to give drugs. Therefore, "osteopaths," "occultists," "nature-curists," and "water-curists," "osteothrapists," "somatopathists," "mechanoneural-therapists," "vitopaths," and all of similar ilk come in the class of modern quacks. As was said in a recent editorial of the New York Times, "A course in medicine and surgery is expensive, and takes a lot of time, while a varied assortment of pseudo-religious and pseudo-philosophic phrases can be learned in a few days by any man or woman with a disinclination for honest work."

Not many people, especially of the country, know that such a great per cent of the strong recommendations and red-hot testimonials secured by these quack concerns are entirely false. It is not claimed that all are bought, but upon good authority it is declared that the following is absolutely an accurate description: The medicine agent went to the office of a newspaper and conferred with a manager who sent up stairs for one of the staff members, whose work put him in close touch with the city politicians. He came down, the manager said, "Mr. Jones here, wants to get some testimonials for his new medicine, I wonder if you can help him out." Mr. Jones began, "the stuff ain't on the market yet, you know, and we want to start it off with a lot of good hot testimonials. We want to get good letters from well known city officials and other prominent people. Must have a photograph in each case. We will give them all good send-offs, and publicity never hurts a politician, you know. Think you can get me some?" The manager explained to the staff member that his success meant a big advertising contract for the paper. Jones said, "Of course I'll pay you for them, letter and photograph, from good aldermen, ought to be worth about $5." "I don't think that's enough," said the staff man. "Well, suppose we make it $10 then for and ordinary politician, for head of departments $15, chief of police $25, and mayor $50." The staff member

secured about 30 testimonials and photos from as many politicians who had never seen nor tasted a drop of this medicine. These were extensively used in various parts of the United States.

As education has advanced and become more generally diffused, communication and transportation are easily within the reach of all. The modern charlatans see their opportunity and do not fail to grasp it. His greatest friend and most bountiful benefactor are the thousands of newspapers which penetrate every nook and corner of the civilized world. Some of these papers are daily crying for temperance reform, and are at the same time doing the state and country an injury and injustice equal to that of intemperance itself, by disseminating the effulgent claims of the medical mountebank. By way of parenthesis might we not ask: Are not the United States' mails being used to facilitate a fraud upon the public?

A man was engaged to advertise a concoction for a patent medicine concern, and by comparing statistics learned that if all persons really suffering from the disease the medicine was supposed to cure, bought it, the income would not be sufficient to pay for the advertising alone, so, in his words, "I set out in my advertising to create "Hypos," and if it was not for the "Hypos" we couldn't do business. What are "Hypos?" Why, hypochondriacs I mean: people who have melancholia, the blues, feel depressed, you know, but who really have nothing the matter with them. There are thousands and thousands of them already, but my trick is to make thousands more "Hypos." How? Why by making as many people as possible who really have nothing the matter with them, think that they have the same diseases which our medicines are said to cure. See?" How do you do it? was asked. Condensing what he said, it was this: Advertise under such headlines as, "DANGEROUS SYMPTOMS;" "DO YOU EVER HAVE A HEADACHE;" "DON'T NEGLECT A PAIN IN THE BACK;" "LOOK OUT, TAKE

WARNING;" "NATURE'S WARNING OF NEAR APPROACH OF NERVOUS EXHAUSTION."

In the city of New York, the danger of the quack is seen at its worst. The advertisements of the unlicensed and illegal practitioners setting up claims to super-human power and marvellous cures are unblushingly accepted by nearly all newspapers and with their enormous circulation furnish the widest possible range for those monstrous quacks, whose sole income is founded in newspaper publicity. Let us recall to your attention, there was a man in Western North Carolina who advertised through the papers, to be selling plebian dogs, and it was learned that his dogs were not genuine, he was tried and convicted for fraudulent use of the mails. Now I believe the time has come for this State Society to retain counsel and prosecute the advertising quacks, foreign and native, for the charlatan who imposes upon the credulity of the public is more criminal than he who deals in dogs.

After careful investigation it has been found out that the diplomas of deceased physicians are being used by quacks in the large cities for display in their offices. Some have even advertised, offering a thousand dollars for the diploma of registered physicians who had not been dead over five years. Some of these impostors are gigantic combinations of capital who manufacture nostrums and proclaim them to the public as "God-sent blessings," when in reality they are the fruits of sin in its vilest form. These stockholders are now very wealthy and clad in purple and fine linen, are sailing somewhere in tropical waters off the Bermudas, for instance, in their royal palace yachts, built by the moneys bled from the innocent hypochondriacs of the country.

Dr. S. A. Knopf, of New York City, to whom the "International congress to Combat Tuberculosis as a Disease of the Masses," at Berlin, awarded the international prize for the best essay, on July 31st, 1900, in a statement to the Charity Organization Society of New York, said, "Let me tell you of one instance: A poor woman in the last stage of consumption, came to me seeking advice. * * *. She confessed

she had been treated for a few weeks by a quack concern, her means being exhausted, she was made to understand that they would not continue to treat her unless she would give them a certified testimonial that she had been thoroughly cured of her disease which had been pronounced an advanced case of consumption by prominent physicians. Not having derived any benefit, her conscience would not allow her to become a partner to such a fraudulent procedure."

Let me give you a brief sketch of part of the history of one of the modern quacks. This one, of New York City, a little bolder than some of the rest, on April 7th, 1904, wrote to Dr. J. McPherson Scott, Secretary of the Board of Medical Examiners, of the State of Maryland, asking for permission to register as a physician in that State, without being put to the trouble of appearing there in person. As evidence of his proficiency he said he held a diploma from the "Vetus Academia Physio-medica," but admitted he was not licensed in any state. At 56 W. 65th St., he conducted what he called the Platen Institute, of which he was the founder, President and faculty. He printed elaborate diplomas on parchment, couched in wonderful latin, but would sell one to every applicant for five hundred dollars. Claimed to administer any form of treatment desired. His card surpasses and is beyond criticism. Listen at his effulgent claims, "Dr. C. Conrad, founder, president and medical director of Vetus Academia Physio-medica (inc.), founder, president and director-in-chief of the Platen Institute (inc.), lecturer on physiology any psychology in the old Physio-medical College; founder of osteotherapy, demonstrator and lecturer on osteotherapy at Platen Institute; founder and president of New York Society of Osteotherapeutic Physician; founder and editor-in-chief of the Twentieth Century Journal in Osteotherapy; Vice-President of the American Association of Physicians and Surgeons. Telephone 2204, Columbus. By appointment only. Office, 26 W. 65th St., New York, N. Y." His letter was sent to the Medical Society of the

County of New York, and after careful investigation by their counsel and secret service men, found this man to be an ex-Norwegian sailor who had never studied medicine, and that none of these institutions ever existed save in his own vivid immagination. He was tried and convicted on April 21st, 1904.

Dr. Edward Koch is a fraud of another ilk, who claimed to have diplomas on exhibition at 48 W. 22nd St., New York City. He tried to diffuse the impression upon the public that he was associated with the renowned Professor Robert Koch of Berlin. The so-called consumption cure, of which he was the head, had offices in Buffalo, Chicago, Boston, Pittsburg, Altoona, Philadelphia, Cincinnati, Baltimore, Washington, Rochester, St. Louis, Newark, and other large cities. This is the kind of medical stock company that is bleeding the life blood from the consumptive poor. They are not often brought to justice, for they move in rotation from one office to another too quick to be easily apprehended. But this self-constituted doctor was tried and convicted in the District of Columbia.

I have been stimulated to write this article by an advertisement in the Raleigh News and Observer under the brazen caption, "What mysterious power does this man possess?" and, "The dead brought back to life." Of course, as the quacks all admit, "The secret of their success is in the way they advertise," this particular advertisement is very likely to catch its share of the unwary. Listen what brazen self laudation! What blasphemy! This culprit is proclaiming to the public that, in one night he has completely upset modern medicine, defied all known laws of nature and utterly dumbfounded scientists. This sounds like one of old gone mad with desperation. If the greatest of all the ancient medical knaves, Paracelsus, could only know of this he would turn over in his grave. I have had occasion to observe several patients or people who have become victims from this advertisement. None of whom have been cured or bene-

fited one iota. One worthy young married man, after taking this fakir's medicine for two or three days, became very much worse, stopped using the medicine and wrote to the supposed doctor for advice. In return mail came directions to take more of the medicine and continue it with the positive assurance that it would cure him. With such positive assurance he took the medicine again for a few days and became so very sick he went to bed and sent for me. I found him pulseless and almost breathless. He could not speak and was extremely cyanotic. It was three weeks before he was up and about. This man's disease is chronic of course, but it had never before kept him in bed over one day at a time. For four months after this he was incapacitated for work, he is now, after my treating him, in very fair health, not cured, however. I verily believe that had he taken a little larger doses or a few more he would have died from its effects. This patient will make affidavit to these statements. He is of unquestionable family. (These affidavits have been secured and forwarded to counsel of Medical Society Co. of New York.) Does it not appear, then, that the newspapers are accessories to the fact of extending world-wide the great and dangerously demoralizing influence, the drug habit?

The history of one fakir, who was registered, however, is very interesting and instructive. An applicant for life insurance having been rejected, the company's agent suggested the advisability of consulting H. H. Kane, who advertised in the *New York Sun* to be a specialist in men's diseases. The patient was examined, and check for $800.00 demanded. He was told that there was little hope of his living unless prompt action was taken; $2,500.00 was paid in all within thirty days. Then he was advised that unless he could buy radium in sufficient quantities he could not recover; nine thousand, eight hundred and seventy-two dollars was obtained in this way, but not until the patient had been rendered practically unconscious five or six days by hyperdermic injections. This case having been brought to the attention

of the Medical Society of the County of New York, three months were spent in securing corroborative evidence. When this evidence was obtained and the so-called radium drops examined by Dr. Ernest J. Lederle, and shown to contain nothing but gentian, Henry H. Kane and Wm. H. Hale, his assistant, were arrested for grand larceny; on trial they plead guilty and paid back the $10,000 and $2,500 more by way of damage, making $12,500 in all. They were sentenced to four and eight months respectively, in March or April of this year, and are now serving in the penitentiary.

Their sentence carried with it a revocation of their license to practice medicine. Dr. Kane's advertisement cost him in the *New York Sun* for twenty thousand lines, $6,800; in the *Evening Sun* for twenty thousand lines, $5,100.

Dr. L. R. Williams is in the same category, and pays from $5,000 to $20,000 per year for newspaper advertisements. Men and women from every State in the Union have drawn out their bank accounts and gone to the large cities, the victims of the alluring advertisements of these quacks, and returned penniless.

Deaths, evidences of many crimes of the fakir Hornbook as spoken of by Burns in his inimitable satire, were horrible in the extreme, but it would be a very easy matter to find duplicates over and over again in the records of actual crimes as found in the proceedings of the criminal courts of the larger cities of to-day.

That there are thousands and thousands of crimes committed, often resulting in shame, great suffering and death, by and at the instance of these unlicensed and vicious pretenders is hereby unquestionably proved.

From the very best authority comes the report that there are now twenty thousand quacks in New York City, and only six thousand regular physicians. When we reflect that the condition which obtains in the metropolitan city is only an index to that of our whole country, is it not time for the profession to rise up and expose these enemies of mankind!

It will no doubt be said of Wallace Hadley, Hathaway and Atkins of *News and Observer* fame and the Boston Medical Institute, and all others of their ilk, as Burns said of Dr. Hornbook—

> "Thus goes he on from day to day,
> Thus does he poison, kill and slay."

If this article serves to direct the attention of any one or of this Society to the evils confronting our profession, and thereby stimulate us to better endeavors and deeper study whereby to check and call to account these monstrous and fraudulent pseudo-medicine companies and pseudo-doctors who are continually flooding the country with their literature and selling medicines(?) which are in reality dopes, and are demoralizing communities, leading to the establishment of the drug habit, it will have filled its mission, and I will feel abundantly repaid. (So Mote it Be.)

Life Insurance Examinations.

BY O. L. DENNING, M.D., DUNN, N. C.

The duties and obligations of all parties concerned, namely, the soliciting agent, the applicant, the doctor and the insurance company:

While this paper is written mainly with the idea of setting forth the duties and just financial compensation of the examining physician, yet it is necessary to mention the other parties, as his duties are so closely connected with their's, and yet his services are, in some respects, different from each of the others.

First, the soliciting agent. We take it for granted that he is a high-toned, honorable gentleman, or the company would not wish his services, but still he is liable to be mistaken in judging an applicant, and the doctor must be on his guard not to allow the agent's good description, either oral or written, of the applicant make him any the less careful in his examination. On the other hand, we must be careful not to find defects in the risk, when in reality none exist.

Promptness in attending to the examinations as soon as you are in receipt of the application is the key to making the agent successful in securing business for the company. This very promptness is what often causes the doctor to lose more from his practice than he earns by the examination, for he feels that he must go at once, even though it be a long distance in the country, and when he returns often finds that some of his best patients have had to secure the services of another physician. On the other hand, if he postpones his examination, he may later go, only to find the applicant has changed his mind or has given the insurance to some other agent. An accident like this is sure to bring you into disfavor with both agent and the company.

Second, the applicant. We will take it for granted that he is perfectly honest in his statements, but even then through

ignorance or by being misinformed, he may deceive you about some diseases of vital importance to the company. On the other hand, a hyper-conscientious applicant may magnify trivial ailments to such an extent that he would surely be rejected, so it is our duty to listen to all he has to say, examine closely and give only facts and not imaginary diseases to the medical director. The doctor's good common sense in this respect is what makes his services of value to the company, for in the first instance, by carelessness he can easily be lead into recommending a hazardous risk to the company, who would in all probability issue a policy, and in the second instance, by being too easily convinced that a temporary trivial ailment was some chronic incurable disease, he could cause the rejection of the applicant, thereby being the means of withholding good paying business from the company, who, on the other hand, was paying you to recommend just such risks.

Third, the doctor. (The duties of the physician are partly set forth to the company in mentioning his duties to the applicant and agent.) In addition to this, he should prepare himself for making examinations; have available a urinalysis test case, a stethoscope, and a tape line. Be sure to always measure, make a careful urinalysis, because the urine is often the only clue you can get to an approaching disease which unfits the applicant for life insurance; and make a careful examination of the lungs, heart and liver. In case you are in possession of facts not stated by the applicant which would be of service to the company, you should notify same by private letter.

Fourth, the insurance company. The companies as a rule require that their examiners be men of ability, integrity and experience, and prefer them being members of worthy and standard medical societies. They exact and require the most careful of service, they do not make allowances for extra trouble and long distances and later inquiries they may see fit to make. Until a recent date nearly all companies al-

lowed a $5.00 feet for ordinary examinations, requiring urinalyses, and a $3.00 fee for the same examination without the urinalysis. This fee has been and still is satisfactory. But recently some of the companies have formed an agreement to reduce the examiner's fee to $3.00 for all examinations under $2,500 or $3,000. The amount of work, responsibility, other troubles and expenses are in no way made less for us, and a $1,000 applicant requires the same careful examination as a $5,000 applicant. Furthermore, the majority of applicants apply for one or two-thousand-dollar policies, so it virtually means that we will be cut off from our $5.00 fee to which we are so justly entitled. The companies claim that owing to competition and small profits on premiums they can not afford to pay but $3.00, but the official records show different. In 1902 there were 14 Southern States that paid in premiums to Northern insurance companies, $45,384,555, and these companies paid back in that year only $15,578,163; and in 1903, $51,906,825—$18,-078,750. Thus leaving a clean profit to the companies of $63,634,467.

So many companies are now trying to join this reduction of fees, that it has become absolutely necessary for the medical profession to come together to protect itself and fight this unjust reduction. This is in no sense a "strike" by us, but simply an honest effort to main our own and receive just financial compensation for the services required of us. If we submit to this reduction, it will be just as easy in two more years for them to offer us only $2.00, and then in a few more years only $1.00, when we would scarcely get pay for our time, much less our knowledge of a desirable or an undesirable risk.. The companies argue that it does not take much time from the doctor's practice, but the time it takes is not the true value, but our ability to make a satisfactory examination. If it is only time they expect to pay for, they can engage some men at 25 cents an hour to write the answers on the blank, but the company will say at once that this is not

the man desired. No—what they wish is a $5.00 man for $3.00.

Fellow physicians, our services and knowledge are worth $5.00 to any company; don't sell yourself cheap; other people value you as you value yourself. The companies will pay us the $5.00 fee as of old if we come together and state our case fairly before them. In case any company should not agree to give you the just $5.00 fee, politely refuse to do the work. Withdraw your influence from such a company, do not answer any inquiry they may make concerning one of your patients, unless the inquiry is accompanied by a $2.50 check. Speak a good word for your friendly agent, whose company is willing to pay for your services, and soon we will be rid of all so-called $3.00 companies. They will either see their mistake and give you the just $5.00 fee or withdraw from your immediate territory, thus leaving the $5.00 companies in full control of all the business. I speak from experience. One company who has tried to force this $3.00 rule in our section has only been able to get one ordinary examination made by a doctor since the first of January, 1905. The poor agent had to pay the extra $2.00 required, then resigned and began work for another company. The $5.00 fee is a strict rule of our Medical Society, and if every Medical Society in the State, and then in the United States, would adopt the same rule, we will save ourselves from eventually working for nothing.

Since the first of this year several companies have tried to reduce the fee by endeavoring to change medical examiners, but in our Society we all work as one, so that some of the companies very thoughtfully returned to the $5.00 fee, while a few others have held out at the expense of getting none, or scarcely any business.

I sincerely trust that the societies each and every one all over the State will adopt the $5.00 fee rule, as has the Harnett County Medical Society and some others already.

Relative Value of the Various Methods of Determining the Sanitary Quality of a Water Supply.

BY ERNEST C. LEVY, M.D., RICHMOND, VA.

It is only within comparatively recent years that the importance of pure water has come to be fully recognized. Up to that time little more was asked of any source of supply than that it could be relied upon to furnish an abundant quantity of water pleasing in appearance and agreeable to taste.

In the dawn of the new era, when men began to realize that a water possessing the above elementary requirements might still be unwholesome and even dangerous for drinking purposes, the aid of the chemist was called in to settle the question. During this period things were expected of the chemist which we of to-day know he is unable to accomplish. It was then common practice to send them a bottle of water, with no data as to its source or as to surrounding conditions, and expect him, as the result of his laboratory investigation, to give a final and absolute opinion.

With the advent of bacteriology, hopes were for a brief time entertained that an infallible means had been found for determining the sanitary quality of any water with unerring accuracy. The really harmful factor in a polluted water being the bacteria of disease which might be present, the detection of these, it was argued, would be the final proof of the unfitness of a given water, while in their absence a water could be considered at least not dangerous. But it was soon found that, however well established the relation between certain bacteria and the disease to which they gave rise, and however easy their identification in pure culture, yet the detection of these bacteria in water was a task never easy and usually impossible. Thus, because bacteriology stood self-confessed as unable to accomplish the supreme task demanded of it, the real possibilities of the science were either

overlooked or undervalued, and, for a time, indeed until quite recently, chemical methods again enjoyed the ascendancy, though now decidedly shorn of the almost superstitious reverence previously accorded them.

Along about this time it began to be recognized that the subject of water sanitation was one of sufficient importance to constitute a real specialty in itself, and so, while most chemists and bacteriologists were engaged in the futile and rather amusing attempt of claiming superiority for their respective sciences, a few, with wider vision, began to attack the problem in the true modern spirit—by work instead of words—and as a result of their labors, both directly and in the impetus thus given to the whole subject, the modern water expert came into being. The object of the present paper is to show the necessity of bringing to bear all available methods of research in arriving at a trustworthy opinion of the sanitary quality of a water supply. This can, of course, be done merely in outline in a paper of this kind.

As above suggested, the work of the water expert is not the simple matter it was formerly held to be. True, in many instances a given water is so obviously and grossly contaminated that its unfitness for drinking purposes is manifest to even the most casual observer. Such cases need not be discussed here. At the other extreme stand those woodland springs and streams (each year becoming more rare) so removed from all possibility of contamination as to be unquestionably pure. But the vast majority of all possible sources of water supply (excluding those so plainly contaminated as to be unworthy of consideration) fall in the class where prudence suggests or demands an investigation of their sanitary quality.

The opinion is still widely prevalent, not only among the general public, but among members of the medical profession as well, that a chemical examination of water for sanitary purposes is much the same thing as an analysis for any other purpose, such, for instance, as for the determination of the

commercial value of an iron ore or the purity of a food product. Such is by no means the case. In a sanitary water analysis the analytic processes themselves are for the most part as satisfactory as in the instances above cited, but with the iron ore or food product the interpretation is evident when once the analysis has been made, while the water analysis merely furnishes data to assist the judgment in arriving at an opinion. This is a necessary state of affairs, arising from the fact that, in a water contaminated by ordinary sewage, chemistry does not detect the presence of any substances injurious in themselves or even any substances actually characteristic of sewage, but merely gives evidence of the presence of such things as, however harmless in themselves, have been found to be associated with polluted water. Thus, were one to give to a chemist a sample of water to which had been added a few spoonfuls of moderately salted broth, the analysis would be pretty much the same, even before the broth had undergone any change, as if an even larger amount of sewage were present; yet the broth is, of course, harmless, while the sewage might contain myriads of typhoid or other disease germs.

In spite of their limitations, the importance of chemical methods must by no means be underestimated, but, except in cases of marked pollution, they can seldom be relied upon in themselves for furnishing adequate information. Their greatest field of usefulness, perhaps, is in affording a measure of the degree of pollution where this is very great, rather than in giving evidence in more doubtful cases.

In one direction at least, chemistry is able to do what can be accomplished by no other means, namely, to afford evidence of the fact that a spring or well water comes from a polluted source, even when complete removal of the contained bacteria and oxidation of the organic matter originally present in the water has been accomplished. In this way it can direct attention to the possibility of future danger through interference with the soil filtration by which purification is taking place at the time of the examination.

Bacteriological methods, like the chemical, fail as a rule to show the presence of the actual things which make a water unwholesome or dangerous, but they accomplish a much nearer approach to this end. The real danger in a polluted water lies in the presence of bacteria of disease, and especially, so far as our present knowledge goes, in the presence of bacteria derived from individuals suffering from certain diseases in which the germs gain entrance to the body by the mouth and leave it, enormously increased in numbers, from the other end of the digestive tract. Bacteriological methods are able to determine, with a high degree of accuracy, the presence of organisms characteristic of sewage, and since a water supply which is shown to contain sewage must be liable at any time to contain dangerous micro-organisms (in case any of the individuals contributing this regular sewage should be suffering from any of the water-borne diseases), such water is very properly held to be dangerous.

Not only can bacteriological methods determine the presence of sewage contamination with greater directness than can be done by chemistry, but they can detect its presence when the dilution is so great that chemical methods fail utterly. In distinction to what has been said of the ability of chemical examination to throw light on past pollution and to predict, at times, the danger of serious conditions in the future, the revelations of bacteriology are confined strictly to conditions existing at the time of the examination.

Besides the chemical and bacteriological examinations, we are able to gain valuable information in some cases by means of the physical and direct microscopical examinations, which last affords a means of ascertaining the character of the suspended matter present, including organisms other than bacteria. These two methods, while having their own field of usefulness, are not of as great value in this special connection as those previously mentioned.

In determining the sanitary quality of a water supply, we have, in addition to the laboratory methods above mentioned,

two other methods of the utmost value: (1) a study of the vital statistics of the community supplied by the water in question, and (2) a sanitary study of the watershed in the case of streams, and of the more immediate environment in the case of wells and springs.

The information to be gained by studying the vital statistics is, of course, available only in connection with a water supply already in use. In certain instances the information secured by this means is more positive than that obtainable by any of the above methods, but this study must be conducted with the greatest care, avoiding the many pitfalls always in wait for the unwary.

Regarding the sanitary study of the watershed, it is right here that a mistake is frequently made. While it is universally acknowledged that only the chemist and bacteriologist can carry out the methods of these special sciences, it is by no means uncommon to regard the ability to draw correct deductions from a sanitary study of a watershed as independent of such special training. As a matter of fact, the ability to give their proper value to the various features present and to sum up intelligently the influence of all the factors involved comes only from long experience. Even then, cases will arise in which the water expert must draw upon his judgment rather than upon any precedent either in his own experience or that of others.

A careful investigation of all possible factors of contamination must be entered into. The relation of the volume of the stream to the amount of polluting material, the distance of the source or sources of pollution from the intake of the water supply, the time taken by the stream in flowing between the points in question under both normal and flood conditions, are among the most important considerations where a running stream is concerned. In this connection it may be mentioned that modern scientific opinion tends more and more to the view that, in the present built-up condition of our country, very few streams indeed furnish a water

entirely satisfactory from a sanitary standpoint without the adoption of some means of artificial purification. In the case of springs and wells the points to be observed are different, and usually relate to the rather immediate environment, except in the case of deep (real and so-called artesian) wells, the water of which may come from greater distances. The geological structure of the region must always be given consideration. In a recent case of the writer's the fact that certain shallow wells were in rocks of igneous origin led to the expression of an opinion quite different from what would have been given had they been in sandy or gravelly soil.

From what has been said it must be evident that the forming an opinion as to the sanitary quality of a given water is a thing demanding more than a mere chemical and bacteriological examination. Both of these are necessary, but in addition to this there are many other things to be done. Even so far as the analyses themselves are concerned, the real test of skill is in the ability of putting a correct interpretation on the analyses after they are made. The analytic data themselves may aptly be compared to the symptoms which enable the physician to make his diagnosis, and every member of this Society knows the skill demanded in this connection, and how, at times, some apparently trivial symptom, which one of less experience might entirely overlook, may lead the skillful diagnostician to his final judgment of the true condition.

The study of the surroundings should never be neglected. To do so would be much the same as for a physician to be contented with making his diagnosis and deciding on his line of treatment after making a laboratory examination of the urine, sputum and blood without ever having seen his patient or having even learned anything of his past history or present symptoms. At times this might be possible, but generally it is a thing few would care to attempt. Of course it is possible in many instances to have a division of labor between a skilled observer in the field and the chemist and bacterio-

logist in the laboratory, in the same manner as the laboratory worker and the attending physician may co-operate.

The writer wishes, in conclusion, to urge upon the members of the medical profession the importance of becoming acquainted with the work which has been done in recent years in connection with water sanitation. While such a degree of familiarity with the subject as can be acquired by the busy practitioner will not, of course, make him an expert in this line, it will still enable him to do an immense amount of good in calling attention intelligently to some of the more palpable transgressions against the laws of health, which are now reaping their regular harvest of illness and death.

The Internal Secretions.

BY M. EUGENE STREET, M.D., CLENDON, N. C.

The importance and the potential possibilities of serum therapy are to-day recognized as never before in the history of medicine. The limitations which have so long controlled in the treatment of diseases are being crossed, and we are finding ourselves possessed with means of more successfully combating disease.

The object of this paper is to call attention to the serums, or internal secretions of the organs of the human system, and to their importance and to the necessity of studying them if we would be qualified to extend to our patients the greatest benefit.

The advances made by the physiologists and the physiological chemists have thrown new light upon obscure subjects, and placed medical science on a more solid foundation. Some most remarkable results have been obtained within the past few years. The transformation wrought in cretinism and myxædema by feeding on thyroids stimulated renewed interest in the investigation of the ductless glands. The discovery of a blood-pressure raising principle in the suprarenals by Oliver and Schafer in 1895 indicated some important function of these organs heretofore undetermined. And when the powerful effect of a minute quantity of this substance was observed, greater interest than ever was aroused, and renewed research by many competent investigators was carried on, and it was found that the suprarenals did indeed perform a most important physiological function, and also that they furnished the key to the functions of other ductless glands. It was found that the adrenal glands depended to a great extent upon the functional activity of the thyroid gland, that the thyroid gland's secretion stimulated the anterior pituitary body, and this by its direct connection to the adrenals through the solar plexus, the splanchnic

nerves, and the cervico-thoracic ganglia of the sympathetic, maintained the normal activity of these glands. Thus forming what Sajous terms "the adrenal system," through which cordiac action, respiration, and general cellular oxidation are maintained.

The adrenals secrete a chromogena colloid hyaline fluid which leaves the organs through the suprarenal veins, and is mixed with the plasma of the venous blood in the inferior vena cava.—Sajous. This adrenalized plasma has a marked affinity for oxygen, and when it reaches the pulmonary alveoli causes the absorption of oxygen from the alvealer air, and the carbonic dioxide in the blood is thus forcibly replaced by oxygen, and expelled with corresponding vigor. The red corpuscles after this operation, bathe in an oxygen-laden medium and their hæmoglobin becomes reconverted into oxyhæmoglobin. The red corpuscles absorb only a part of the oxygen from this oxidizing substance and the balance left in the blood plasma.

This oxidizing substance is the reagent to which the oxidation processes that occur in the blood stream are due.

Absence of or decrease of the function of the thyroid gland causes decreased functional activity of the suprarenals and insufficient oxidation in the body results,—a state of cretinsus or myxœdena. Exaggerated function of the thyroid, either from pathological condition of the gland or from feeding thyroid extract, causes greatly increased functional activity of the suprarenals, and increased oxidation results,—exophthalmus.

This oxidizing substance secreted by the adrenal system not only maintains life by insuring oxidation, but when poison of any kind, mineral, vegetable or bacterial toxins, are introduced into the system the functional activity of the adrenals is increased, with the result that the oxidation process is correspondingly increased, indicating that its secondary function is to protect the organism against disease. Thus the adrenal system simultaneously sustains life, and aims to preserve it.

In other words, immunity is shown to be the result of the action of the internal secretions.

Leucocytosis, with the alexius secreted by the leucocytes, depends upon increased adrenal function. And the phagocytasis, which is the preponderating factor in immunizing processes, was found to be due to the spleno- pancreatic internal secretion—trypsin, which is the organic body that reduces toxins to inert cleavage products, and is the agency which digests bacteria in the digestion vacuoles of the phagocytic leucocyte.

The results of the investigations upon the antitoxic power of the blood and other fluids by Metchnikoff, Pfeiffer, Denys, Hankin, Von Fodor, Nutall, and others, harmonize in that they all point to the bactericidal power of the blood serum.

Ehrlich's side claim theory no longer seems necessary. His amboceptor is the oxidizing substance of the adrenals, and his complement (Metchnikoff's cytases) the spleno-pancreatic ferment: trypsin. These two in the presence or fibrinogen, a product of the neutrophyle leucocyte, convert all albuminoid poisons (including toxins) and bacteria into benign products in the blood.

The extreme sensitiveness of the anterior pituitary body, the governing center of the adrenals, to toxins and drugs, indicated the carefulness with which any internal remedy should be prescribed, and also the dangers of self-promiscuous medication indulged in by the general public. Vulnerability to disease may not only be thus acquired, but the adrenal system when debilitated by injudicious stimulation, is unable to protect the system by a sufficient leucocytosis and adequate oxidation when disease is initiated.

A Proper Milk Supply for the Cities and Towns of North Carolina.

BY JOSEPH GRAHAM, M.D., RALEIGH, N. C.

Next to bread and water, milk is probably more commonly used than any other article of food or drink.

In cities and towns almost every home receives daily a supply of milk and cream. This is used at every meal and, with few exceptions, by every member of the household. It is an article of food in which every one may be said to be interested. Milk is a nutritious, economical, and with many a favorite food. It is a very cheap food, as it contains more nutritive matter than can be obtained at the same cost in other foods.

Milk is generally used in the raw state. Most other foods are cooked before they are eaten, and most if not all the bacteria they contain are killed by the heat.

We have no simple means by which we can definitely determine the purity of milk. The quality of most foods can be judged by their appearance. This is not the case with milk. There is no other article of food which can be adulterated or contaminated, without changing its appearance, to such an extent as milk. The fact that milk appears perfectly sweet is not a proof of its purity, for if the germs are already in it, the harmful changes may take place after it enters the stomach. Then, too, some disease-producing germs do not cause souring of the milk; and therefore their presence is not detected.

Impure milk may cause serious and even fatal diseases. Frequently cow's milk is the only nourishment taken by infants and invalids, and it is these who are least able to withstand the ill effects of impure foods. Every year more children have to be nourished with substitutes for mother's milk. Usually cow's milk is selected, and when pure there is no superior food for this purpose.

About one-third of all deaths are of infants, and a very large percentage of these die from diseases of the digestive tract. These diseases are mainly due to impure food. It is therefore reasonable to assert that the mortality of infants has a close relationship to the wholesomeness of the milk supply.

Milk is the most suitable culture medium we possess for the growth of germs. These germs grow and elaborate poisons both before and after it is taken into the infantile stomach.

The agency of milk in the spread of contagious diseases has only lately been appreciated. Outbreaks of diseases have been definitely traced to infected milk. Among the most common diseases carried in this way are typhoid fever, diphtheria and scarlet fever. There is little doubt that tuberculosis is also spread in the same way. In 1900, Kobor collected records of 330 epidemics which were spread by milk. These illustrate very well how the milk most frequently becomes infected. There were 195 outbreaks of typhoid fever, 99 of scarlet fever, and 36 of diphtheria. In the typhoid epidemics the disease prevailed at the dairy in 148 instances; in 67 the milk was diluted with infected well-water; in 34 cases the employees acted as nurses, and in 10 they continued at work for awhile, although themselves suffering from the disease; in one instance it was found that the milk-cans were washed with cloths used about patients; in two cases, the dairy employees were connected with the night-soil service.

Of the 99 epidemics of scarlet fever, there were diseases at the farm or dairy in 68 instances. In the other instances the dairy employees acted as nurses or lodged in infected houses. As it is difficult to procure cow's milk sufficiently free from germs, we have tried to find some safe way to destroy the germs already present. There are two classes of apparatus used to destroy germs; one known as a sterilizer, which sterilizes the milk at a boiling temperature 212 deg. F., the other called a pasteurizer, killing the germs at a much lower temperature.

There are certain disadvantages in sterilizing milk. The taste is very considerably changed, such milk is very much more constipating and more difficult of digestion; also, it seems to be less nutritious—certainly children do not thrive as well when fed on sterilized milk as when nourished with pure, raw cow's milk. Pasteurization of the milk produces less change in the constituents of milk than sterilization, and as it is sufficiently thorough in the destruction of germs, it has become the most popular method of sterilization.

Sterilization of milk has certain limitations. Heating milk destroys only living organisms, it does not kill spores, nor does it remove toxins or poisons. Before sterilization milk may already contain the products of bacterial growth in such quantity and of such a character as to render it wholly unfit for food. Even though just sterilized, it may still be poisonous to an infant, for sterilization will not kill the products of bacterial growth. It is therefore very important that sterilization be done at the earliest possible moment.

We must always remember that sterilized milk is more difficult of digestion. The only value of sterilization is in preventing disease: first, by enabling us to feed infants upon milk in which no considerable fermentative changes have occurred; and second, by destroying disease-producing germs with which the milk may have become accidentally contaminated. Milk can never be made pure after it has once been badily contaminated. *These methods are only meant for somewhat improving conditions which should have been prevented!* The expediency of pasteurization as well as sterilization may be considered doubtful.

It would be far more desirable to use absolutely natural milk from perfectly healthy cows, and so have it good, pure and safe.

The milk supply of Raleigh, my home town, so far as I have investigated, is unnecessarily impure. This fact I have learned through sad bedside experiences, inspection of the dairies, and by repeated examination of samples of milk

bought in the open market. The attention of the Board of Health was called to this matter, and a committee was appointed by the Board of Health to inspect all the dairies and to employ a bacteriologist and chemist to examine samples of milk from all of our dairies. This committee was instructed to devise a plan to correct any evils they might find.

The result of the dairy inspections, together with the bacteriological and chemical reports, showed conclusively that the milk supply was unnecessarily impure.

Forty samples of milk were examined by Dr. F. L. Stevens, of the A. and M. College. These examinations showed that the nutritive quality of the milk was very satisfactory. Twenty-two samples were examined for streptococci. In one instance streptococci were found in considerable numbers. In five other instances streptococci are recorded as being present. Therefore streptococci were found to be present in 30 per cent of the samples examined.

Of the forty samples examined, there was no sample bearing less than 34,000 germs to the cubic c.m., and only eight samples run less than 100,000. These eight were all collected on cold days. Seventeen samples out of 39 run above 1,000,000 germs per cubic c.m., and four samples run above 4,000,000; six samples are between 500,000 and 1,000,000.

These numbers are exceedingly high, very much higher than would be expected, or than has been found in any city the size of Raleigh in which the milk reaches the consumer so soon after milking.

The relation between the number of germs and the amount of dirt in the milk is clearly set forth in the following table representing the analysis of three samples:

Sample No.	Dirt m. g. per Litre.	No. germ per c. c. m.
1	36.8	12,897,600
2	20.7	7,079,820
3	5.2	3,338,775

The curd test was used in 28 instances and fourteen samples were found to be gasey.

The high number of germs found in Raleigh milk is to be attributed to two causes. First, improper handling of the milk, and uncleanliness of the utensils that the milk has come in contact with, and second, failure to cool out the animal heat immediately after milking, and the improper temperature at which the milk has been kept.

Therefore the committee suggested to the Board of Health, that they request the Board of Aldermen to appoint a Milk Commission to control and regulate the milk supply. This Milk Commission should consist of five members,—the Mayor, Superintendent of Health, and three representative citizens. The Board of Aldermen should require each dairyman selling milk in the city to procure a milk license. This license can be revoked if the Milk Commission advises revocation, for good and sufficient reasons. This Milk Commission should employ a chemist and bacteriologist to examine samples of milk at least once a month, and also a dairy inspector, to inspect the dairies at least once a month, and to examine the animals for tuberculosis at least once a year. I consider the tuberculin test very important, for recently, in one Raleigh herd of eighteen cattle, six, or 33 1-3 per cent, were found to have tuberculosis. *All new cattle should be tested for tuberculosis before they are bought by the dairymen and added to the dairy herds.*

It should be the duty of the dairy inspector to examine the cattle, drainage, ventilation, food, water, yards, pastures, methods of milking and handling the milk, and all the matters connected with the health-management and care of the animals. He should see especially to the health of the animals, cleanliness of the barns, proper disposal of manure. Also he should see that there is an abundance of pure water, *that the milk is immediately cooled after milking and that there are proper facilities for cleaning and sterilizing all bottles and dairy utensils.*

The Superintendent of Health should examine all persons working about the dairy or in any way connected with the

care of the animals, milk and utensils, and the transportation and delivery of milk, in relation to their habits of cleanliness as well as for transmissible diseases.

The bacteriologist should examine the milk to test the efficiency of the methods in force. He should take samples from the consumer, in original packages as delivered by the dairyman, and by bacteriological and microscopic examination determine the nature of the bacterial contents, and if pus cells are present. His examinations should be made every few weeks, and will be the truest indication of the thoroughness with which the Milk Commission's requirements are being followed. I think that the bacterial standard of purity should not be adopted until the commission has been working for several months, so as to ascertain *the proper standard.*

The chemical examinations should be made sufficiently often to determine if the milk be of correct composition, of requisite richness and free from adulterations. In our examinations we found the milk of proper fat-content and free from chemical adulteration.

It is sincerely hoped that our Board of Aldermen will adopt some such plan. I believe this is the ideal way in which to control and regulate the milk supply. I believe it is practicable and will produce the desired result, and at the same time will exert little hardship upon our dairymen.

This plan is not expensive. We estimate that we can operate our Milk Commission and employ a dairy inspector and a bacteriologist and chemist for $600 a year. The dairymen will have to bear only a small part of this expense, as they will be charged a very moderate fee for license to sell milk.

For the production of pure milk, fine buildings, fine cattle and expensive apparatus are not at all necessary. At least ninety-nine per cent of the contamination of milk *occurs after the milk leaves the cow.* To prevent such contamination, cleanliness and constant care are absolutely necessary.

At present it is impossible in most of the towns of this

State, to get the health authorities to adopt proper ordinances for the control of the milk supply. The greatest obstacle to municipal control of the milk supply is the fact that *the public does not yet appreciate the absolute necessity for such control and the danger of using impure milk!*

In every community much can be done towards improving at least a portion of the milk supply by the local medical organization. It is in the power of the physicians of every town to control at least a portion of the milk supply. Each local medical society can form an agreement with the leading dairymen of the town to furnish milk according to their requirements in return for their endorsement of the purity of their milk.

A certificate, given by the local medical organization, and stating that a dairy is conducted in an approved manner, would be very useful to a milk-seller by enabling him to secure better prices and new trade; for many of the best class of milk-users would value the assurance thus given. When it becomes known throughout a town that a certain dairy has been awarded a special certificate on account of the excellence of its methods, its business will immediately increase and to such an extent that other dairies will soon be pressing for examinations in order that they may secure similar certificates. In order to make the plan still more attractive to the dairymen, it would be well to bring the matter before the public by periodically publishing the lists of approved certified dairies and making brief but pointed statements of the objects of the system and of the way to obtain the endorsement.

Any one, seeing the list, would naturally look for *his* milkman's name on the list; and, if not found, explanations would be sought. Without doubt, many would insist that those supplying them be on the list. In this way the dairyman would receive a better price for his milk and would be enabled to pay the fees of the local Milk Commission for examining his dairy and product.

The objection may be made, that the small dairyman *can not afford* to conduct his place in the proper way, and that therefore the plan proposed is unfair. The answer to this objection is, that a small dairy can be conducted in a cleanly way as well as a large one. Those having only a few cows and whose interests are mainly in other lines, might not find it profitable, but the necessary improvements need not be out of the reach of farmers with large or even small herds if they are determined to do the thing right and give it all the necessary attention. There is no good reason why those who wish to progress should be deterred by the fact that all can not reach the highest standard.

One of the principal advantages of this plan is that it can be easily inaugurated and that those who wish to be helped by it can quickly get the benefits. That numerous class who would oppose the enactment of these regulations into laws (for the reason that they would not care to be governed by them) would have no ground for *valid* objection because of the *voluntary* feature of the plan suggested. No one would be *compelled* to come under the commission and its rules.

A second advantage is, that it gives reliable information to consumers as to where to secure the best milk produced, and they are no longer compelled to depend upon the *appearance* of the milk or the *statements of the dairyman.*

The marked improvement of a few dairies would have a beneficial effect on the entire supply; and the badly-kept dairies would be obliged to improve to keep their trade. The increased receipts from higher prices and enlarged trade should enable the dairymen to pay moderate prices for certificates.

In some cases it might be better for the local medical organization to establish a milk commission upon a philanthropic basis and demonstrate its value; then the dairymen would gladly pay the expenses.

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Some Suggestions as to the Therapy of Euteric Fever.

BY R. A. WHITAKER, M.D., KINSTON, N. C.

In a practice of twenty years a few facts have been firmly fixed in my mind in regard to this disease. The sooner some of these facts are realized by the whole profession, the better both for the patient and the practitioner, especially so for the patient.

One of these truths—a very important one, too—is, when one of these cases of typhoid fever come under our care, we know we have a disease that is going to run a certain course, lasting from three to five weeks, and sometimes longer; the duration and severity of the attack depending largely on the virulence of the infection and the susceptibility of the patient to the specific poison. If this statement is true, then it is utterly useless and grossest folly to attempt to abort this disease. Yet we occasionally hear physicians say that they can jugulate this trouble, and often hear the laity relate how the Doctor said: "I arrived just in the nick of time; had you waited a day later your child would certainly have had typhoid fever." Nauseous rot, this. The only conclusion that can be drawn of a man uttering such stuff is, that he is either badly furnished in the upper story, or a charlatan and a liar.

When these cases come under the observation of the physician, usually the patient has been sick for some time, and the bacillus Erberth are widely diffused over the human economy —having already set in action morbid processes that only time can cure. Just as well attempt to down or change the course of the "Great Father of Waters" as attempt to abort typhoid fever. Those who live upon the banks of the Mississippi build dikes during the low water, and when the floods come strengthen and watch these—preventing great disaster from flood and inundation. So with the prudent physician. He does not attempt to abort this disease, but to guide and direct it, to watch and ward off complications, to

conserve the patient's strength, keeping him in the most favorable condition to stem the flood-tide of toxins that are sapping his very life.

Those of us who have given study and thought to the morbid anatomy of this trouble know that there is as much reason in saying we can take a pair of hot, sizzling tongs and pinch a piece of flesh from the body and repair the damage in a day, or a week for that matter, as to say we can jugulate typhoid fever. These bacillus when they enter the system attack Peyer's patches and the solitary glands of the intestines, the glands ulcerate and often slough, resulting in hemorrhage and perforation, forming conditions that only time can remedy, and equally as grave, in fact graver on account of location, than when the flesh was destroyed by the hot tongs.

Enteric fever from its name would indicate a disease of the intestinal tubes alone, but the physician that regards it exclusively as a tubal disease makes a mistake. It differs from some of the infectious diseases in the fact that the whole economy is exposed to the specific bacillus, and that the lesions can be found in any part of the body. We know diphtheria is a disease confined almost exclusively to the upper air passage, and by local treatment we can limit its toxæmia, but this is not true of typhoid fever; for sometimes, and I might say often, the intestinal tubes are free from any lesions whatever of the bacillus Erberth, and yet the patient is at death's door from the infection, which is expending its energies on some other organ. Richardson, Blumer and Horton Smith claim that the feces of the typhoid fever patient are laden with the bacillus up to the third week, but from that time on they rapidly disappear from the stools of the patient till none are found therein, unless the patient has a relapse, when they again make their appearance in the feces. The same authorities claim that at the beginning of the third week, when the bacillus begin to disappear from the stools, they are found in enormous quantities in the urine of some patients. They

are found in the urine of some typhoid fever patients as late as three months, according to Horton Smith, when the patient is perfectly well and going everywhere.

This being true proves conclusively that typhoid fever is not purely an intestinal disease, for we have the infection in the body after all traces of the trouble in the bowels has disappeared. Hare makes this point very plain in his book on the medical complications and sequelae of typhoid fever. He says: "The number of cases now on record in which typhoid fever has been present and caused death, and in which no intestinal lesions have been found, post mortem, are many." In other words, "While it is true that the intestinal glands are the usual and favorite seat of the morbid changes in this disease, it is certainly possible and, indeed, frequent for the infection to spend its energies on the lungs, the cerebral meningies or other parts." When these specific bacillus enters the system not only do they involve the intestines, but they attack every organ of the body. If this be true, and it is, for recent research establishes this fact, then the conclusion follows as surely as day follows night, the therapeutics that has for its purpose the aborting of this trouble, is meddlesome, fallacious in theory and baneful in practice. Let the "natural processes take their course," "let the patient get well." Don't attend a patient to cure typhoid fever or to treat it by any given routine, but watch the patient, prevent complications, guide him through his trouble to a favorable termination.

In my opinion the liver plays a part in this disease that is little understood.

The glands of the intestines being the earliest and chief places for morbid changes, the debris and waste caused by these processes are taken up by the nusenteric veins and carried thence through the potal system direct to the liver. When the bacillus reach this organ and the gall-bladder they have a favorable medium in which to grow and multiply, and from this central position they are poured out in great numbers to all parts of the body. Especially is this the case if

the liver be torpid or the gall-sack distended for any length of time. I was informed by a resident physician of University Hospital of Maryland, that a few years since in that institution a patient was operated on for gall-stone. From the stone removed from this patient's gall-bladder was made a pure culture of typhoid fever bacillus. At the time of the operation the patient had no typhoid fever, nor had he had for eight years. But eight years previous to the operation the patient had a severe attack of enteric fever. It would seem that for eight years these specific bacillus had lived and flourished in this man's gall-bladder. Further, it would seem, this patient had become immune from the poison. Culture after culture forming and thrown off by the emunctories of this man, making him for eight years a living, walking menace to communities in which he may have resided.

In the treatment of infectious or contagious diseases, preventative treatment is the most important; especially is this true in enteric fever, a trouble that can not exist in a perfect sanitary surrounding. It is not my purpose, however, to dwell on this phase of the subject, so will only mention a few of the most important measures for prevention. Among these are complete isolation of patients and thorough disinfection of excreta; careful inspection of drinking water, its source of supply and the means of its conveyance; an equally careful inspection of all foods; lastly, cleanliness in the strictest sense of the word—removal of all impurities in the way of garbage, excreta, etc., and prevention of saturation of the soil by sewage.

There is but little doubt in a majority of cases of typhoid fever is water-born or water-conveyed disease. Then we have the strongest incentive to secure our drinking water from a pure source and have it conveyed to us in the cleanliest manner. To my mind there is no menace to human life so great as the shallow, open, surface wells that are so often seen in the eastern section of our State.

In 1892 I knew a community in which the wells just re-

ferred to became contaminated and a source of infection, resulting in a hundred cases or more of enteric fever, many of which ended fatally. All these cases resulted from one point of infection. A young lady teaching school in an adjoining county contracted the disease; returning home, from the careless way they handled the excreta of this patient, the well became contaminated, and afterwards the wells of the whole neighborhood.

In the general management of cases there are three things of great importance: Careful nursing, judicious nourishing and stimulation of patient, and exclusion of all visitors from sick-room. In my country and village work I have more trouble and worry from those curious, meddlesome characters of the neighbrohood than any other source. They will somehow, by chance or agreement, congregate at the sick country houses, and woe betide the patient for that day. The fatigue and worry he is subjected to by these dear, sweet creatures will retard his recovery for at least a week, if no greater damage be done. By all means exclude all visitors from sick-room. In nourishing patients, great care should be taken to never overtax the already weakened digestive apparatus. It is not the patient that takes daily the greatest quantity of food that is always the best nourished, but the one that digests and assimilates what he does take. All foods, however simple and harmless they may be, that are not properly acted upon by the stomach, pancreatic fluid, when they enter the intestines undergo a state of fermentation and decay. Hence a fruitful source of many of the graver symptoms and complications of enteric fever: Undue flatus —persistent, troublesome diarrhœa—greatly augmenting the chances of hemorrhage and perforation and death. In nourishing these patients it is one of my chief aims never to have food of any kind passing through the tubes undigested. Better barely enough nourishment than having milk curds or other undigested substances passing through the diseased tract.

The stimulation of these cases should be as judicious and discreet as the nourishing. In this connection I wish to enter an honest protest against the indiscriminate use of alcohol in enteric fever. Delirium is usually the result of high temperature, toxaemia, and profound asthemia. Severe and persistent delirium is not likely to occur in cases that are seen early and that have been properly managed. When these conditions do arise, however, some of these cases show improvement from a judicious use of alcohol, yet care should be exercised in its administration, else we will have the condition we are combatting augumented by alcoholic delirium. Again, alcohol, in the smallest quantity, has a tendency to weaken the digestion. A constant and continued use of it in these fevers has a bad effect on the stomach. Its functions are very much interfered with and digestion weakened and retarded at a time when it is so necessary for the stomach to be doing its full duty. For these reasons, except in well selected cases, I have excluded alcohol from the treatment of enteric fever. As a stimulant strychnia has proven much more satisfactory in my cases. I use it in the form of fluid extract nux vomica. It aids the stomach in its work and is a fine tonic for the whole intestinal tract. As a stimulant it is superior to alcohol, and especially so in those profound cases of asthemia. Nothing will keep the heart going so well and so long and tide the patient over those dangerous conditions. It is astonishing how much of this drug can be given to these cases without any bad results. As I have previously stated, by proper management, many of these cases need no stimulants at all.

In those cases when the mouth is very dry and red, the tongue brown, cracked and bleeding; and a tendency to diarrhea and distension of bowels; the mouth should be kept thoroughly cleaned with some good mouth wash, and turpentine freely given. In these cases, if fluid extract of hydractis is given in 20 or 30 drop doses every 4 hours, there is generally rapid and marked improvement. It has given

me more satisfaction in checking these troublesome conditions than any other drug. In some of these cases opium may be required for immediate effects in quieting peristolcis of bowels till the hydrostris can get in its work; in a large majority of these cases no other drug but the hydrostis is needed.

We come now to the question, what shall we do in treating the fever itself? It is my practice to let the fever alone when it does not go much above a hundred and three, Fahrenheit; yet, the fact still remains there are but few cases of this trouble but what at some stage of the disease needs some anthpysetic measure. A state of hyperpyrexia, when found, and in whatever disease it may be located, needs immediate attention. Then the question arises what is the best method of relieving this excessive temperature with least injury to patient. There are but two ways of doing this—by antipyretic drugs or by application of cold directly to patient. It is my belief that antipyretic drugs, whenever used in these fevers, are deleterious. They do harm in themselves, mash the progress of the sickness, and reduce the vital resistance of the patient to the toxins of the disease. It has been my experience, that whenever a dose of antipyretic has been given in enteric fever, so soon as the effects of the drug is gone and reaction has fully set in, the fever invariably goes higher than before the drug had been administered. They increase the fatal tendency of this disease. Not so with application or cold direct to surface of the patient. With the cold sponge bath we reduce the excessive fever without blocking and daming up the toxrins in the human economy, thereby giving the already overtaxed emunctories more work than they can do in eliminating these poisons.

As I have just said, the cold bath does not decrease the vital resistance of the patient, as these coal tar products do, but increases patient's power of resisting the infection by stimulating glandular and all other activities of the body; in this way accomplishing as much or more good than in reduc-

ing temperature. The effect of these sponge baths on the nervous system are most beneficial. Often after giving them the patient will drop into a quiet, refreshing sleep, and rest for hours, awaking therefrom greatly refreshed and invigorated.

The remedial treatment of typhoid fever is eliminative—meeting every complication as it may arise and directing each case as best we may, to a favorable ending. When fully satisfied I have an enteric fever to deal with, I never hesitate to give the mild chloride of mercury in sufficient doses to get several good bilious stools from patient; and, from then on, each day, from a half to four or five grains of the drug is given as occasion may require till convalescence is well established. The drug is usually administered in 8th or 10th grain doses four or five times a day. In the first and second week of the disease, this is usually enough to keep the bowels moving from one to two times a day and control diarrhea. In the third and fourth week of the trouble, it requires more, and when bowels do not respond to drug as administered above, at night from a half to two grains is given as may be required. My object is to have bowels evactuated at least once or twice a day, and never allow the liver to become sluggish or bile to accumulate in gall bladder. Those of us who have had much experience in the treatment of this tedious and dangerous disease, have seen patients in the third and fourth weeks of the trouble, apparently on a rapid road of recovery—convalescing nicely—relapse, and their second case was worse than the first. We wisely say a reinfection— a reinvasion—and this is true, for the bacillus again appear in the feces of the patient. But the question arises from whence come this reinvasion? From what source do these bacillus—this poison enter the intestine in sufficient quantities to set up a new involvement? We have patient isolated, in perfect sanitary surroundings, pure food and pure water is administered to him each day; and more, he is in the hands of a trained nurse and has the best medical attention.

Then whence this new invasion? My experience has invariably taught me that these relapses occur after the bowels have been sluggish or inactive from forty-eight to sixty hours or more, and they are ushered in by two or three bilious stools. During this period cultures of bacillus have been made in liver and gall bladder—the gall bladder distended with the poisoned gall. When suddenly empting its accumulated contents into intestines, from more food, or solid food being taken into stomach, the poison is in sufficient quantity to cause a new *involvement*. This will explain nearly every relapse of this disease. Keep the emunctories active. Don't allow the bowels to become constipated or the liver torpid. In the administration of this drug there is a near approach to routine than any other in the treatment of typhoid fever. Yet, the physicians should exercise prudence and care in its administration.

Every case of enteric fever is a law unto itself. No two cases can be treated exactly alike. The physician must study carefully each patient and find the weak points in his physical make up, and guard these weak points. Never become impatient and attempt to force this disease, but let nature take its course, assisting in every way we may.

Personal Views on the Management of Typhoid Fever.

BY EDWARD C. REGISTER, M.D., CHARLOTTE, N. C.

While we are still far from any specific method, capable of destroying the exciting causes of typhoid fever, or preventing its dissemination, or attenuating the activity of its toxins, we have perfected methods of treatment that are rational and scientific. In considering the treatment of this fever it is well enough to devote at least a paragraph to the subject of the general management of cases. We deal with no disease where carefully selected directions, properly carried into effect, bring us greater or more satisfactory returns. It is the little particulars more than even the intelligent use of drugs that deserve most consideration. Patients should be immediately placed in bed, certainly if typhoid fever is anticipated. By doing this we at once begin to curtail an unnecessary waste of vitality and physical force, that later on may play an important part in the saving of the life of our patient.

The removing of cases after they have contracted the disease is a question that often comes up and it is not every time easy to make an intelligent or wise decision in certain cases.

We accept the general belief, and our experience confirms the idea, that it considerably increases the mortality in cases of this fever that have to be moved, certainly to any considerable distance. It usually necessitates the loss of a night's sleep, the omission of a day's medical attention, an improper diet for probably a day, with anxiety and worry and a loss of more or less physical strength. It is the best, as a rule, to advise patients to remain where they are, if the environments are suitable and if the disease has developed to a point where a correct diagnosis can be made. Prior to this, my rule is to encourage patients to go where they can

best be cared for. When the diagnosis has been made, and the surroundings are bad, even if the patient seems very sick, if other quarters are accessible and satisfactory and available, I often recommend the change.

It has always been a matter of doubt in my mind whether it is wise or not to invariably advise the use of a bed pan. I never in the majority of my cases insist upon its use. The practice is not exactly orthodox and may cause adverse criticism. In most cases it is only necessary to consider but one thing when the question arises— it is this, will its use cause less physical exertion, less effort and less expulsive force and straining, than if the patient is carefully taken up in a semi-recumbent position. I hardly think so. There is no more straining on the bowels in a standing or sitting position than in the lying, there is a slight difference in the blood pressure, of course, in these different positions in health, and the same rule prevails in fever cases. It is a prevalent belief now that the straining and expulsive force and effort used to move the bowels in the lying position with the hips elevated, causes in the majority of cases fully as great blood pressure and physical exertion as it will to let the patient be taken up. If the patient has a considerable diarrhea and is very weak with a tendency to hemorrhage, it might be well enough to encourage the use of the bed pan.

If practical the services of a competent nurse should be secured, members of the patient's own family are not, as a rule satisfactory attendants. I prefer a trained nurse and a stranger. The termination of our cases will be greatly influenced by the skill and talent and faithfulness of our attendants. Sometimes competent and conscientious nurses make failures in certain cases. They do not seem to understand the pecularities of the patient, or the patient does not appreciate the methods of his nurse, consequently discord prevails, just the condition that we want most to avoid. If the nurse is not satisfactory to the patient, if at all practicable, a change should be made. Nothing frets a case

more than for him to think he is neglected, or improperly nursed.

The room of the typhoid case should be quiet, sunny and well ventilated. It is always well enough to have two beds in the room, and let the patient lie on one during the day and the other at night. This may appear to be a small thing, yet there is a great deal more in it than most of us might think. It always makes a patient feel refreshed and better when he makes the change. He feels like he has gone to bed for the night, and is sure to rest better and feel more comfortable. The temperature of the room should range from 68 to 75 degrees if it is winter. Nurses should be carefully instructed about drafts. During the active fever stage there is very little risk in letting fresh air and cold air blow upon the patient, especially during the day if he is awake. If the temperature is running low and the patient is asleep, it is well enough to avoid drafts, but if he has any fever at all and is awake a draft is almost without danger. If his temperature is normal and he is awake avoid drafts. If his temperature is normal and he is asleep during the stage of convalescence, drafts are very dangerous. I have seen more than one life jeopardized on account of cold drafts during the latter stage of the disease. The doctor, however, in the country, or even in the city, who deals with newly made nurses and attendants cannot think to warn them at all times about everything that may come up, consequently, in important fever cases, they should be competent to begin with. Nearly every physician believes that he should have a very light room for these patients. Experience has taught me that it is not always the best. Often a bright light causes headache, nervousness, and possibly delirium when a comparatively dark room is much more agreeable to the patient and often enables him to sleep when a bright light would prevent it. A patient's choice about this is a much better guide for us to follow than an old rule that has been handed down to us for so many years. It may appear a trifling thing, yet I always

consider it a good practice to inquire of all my fever patients how they like their beds. They should certainly be satisfied and pleased with them as much as it is possible. Sometimes they are too short, or too hard, too soft, or in ridges, and the physician and possibly the nurse will not know of it, and the patient will hardly have sense enough to complain. Looking after and preventing these little things that annoy and fret fever cases, often saves a great deal of wear and tear and exhaustion of their nervous systems. It is often overlooked by nurses and even physicians, the importance of occasionally turning a delirious or weak patient over, from side to side and from back to side. I lost a patient once by neglecting to do this in the fourth week, on account of hypostatic congestion of the lungs. A mistake like this should never be made.

During the third week it is well enough to anticipate the presence of bed sores. A sudden rise of temperature about the twentieth day in this fever should always suggest this complication. They cause a fluctuating temperature in a large per cent of cases than is usually supposed. While the belief seems to prevail that the physician and nurse deserve reproach, when this dreaded sequela is in evidence, should be discouraged, we ought to recognize the fact that a suitable bed with proper attention given to cleanliness, bathing, etc., will reduce the occurrence of this complication to two or three per cent.

The mouth and teeth and nose of fever cases should be kept clean as it is possible. It makes the patient much more comfortable. They should be washed several times a day with a solution of listerine and water. This possibly eliminates one of the sources of autoinfection, which very often produce, when all of the sources are included, just as much fever, just as much headache and restlessness and diarrhea, and I might add danger, as the typhoid poison itself.

In the general management of fever cases there is nothing that is of more importance than that of admitting visitors.

They have caused more disastrous results and endangered the lives of more of my patients than any other one thing that I have had to contend with. Twenty years ago this opinion was not as well fixed in our minds as it is now, and I know of no other evidence that we are more proficient at the present time than formally than this change in the care of fever cases. We have all observed the rise of temperature, the quick pulse, the restless wakeful nights that follow long conversations with friends who were kind but without tact.

A person's mind in typhoid fever should rest—it should be absolutely quiet. It is as important as the quiet and rest of the body. Anything that will cause the mind to act should be avoided. It is unwise to let fever cases in their convalescent stage, while they have any fever at all, to even look at pictures. This will make them think, and thinking is an action of the mind that ought to be avoided. To have anyone read with fever is an objection well known. To have anyone read to a patient is never allowed among my cases. For them to listen to a conversation, even if they do not participate in it themselves is harmful. After the fever has entirely subsided and after they have had no elevation of temperature for several evenings, I notice that patients very often want some company. It does not usually do them any harm at this stage and I begin to let them receive their friends. During the active fever stage, members of the family should be excluded as much as it is possible. The importance of regulating the number of visitors in all kinds of fever cases now, is so well known, that we have little difficulty along this line, compared with a few years ago.

It is, indeed, a very difficult matter to properly nourish a typhoid case. When I can intelligently feed a fever case, I can usually give a favorable prognosis. We are fortunate if we can conduct a case through and at the end cannot point to some period, where we either overfed, or underfed, or fed improperly. It is well enough for us usually to adhere to some general rules. A patient should always be fed on fluid

nourishment, and this should be kept up at least a week after the temperature has been normal. I am not in sympathy with the usual plan of giving nourishment at fixed intervals, this should be done as much as possible, but it is not always practicable to do this, especially if your patient is not a good sleeper. It is my custom to give nourishment every three hours while the patient is awake. It is seldom that I ever have a patient of this kind waked for the purpose of taking nourishment. We may sometimes find cases that sleep a great deal, and it might be necessary in these cases to disturb these long sleepers for the purpose of giving nourishment. I never have seen but one good sleeper, suffering from typhoid fever, die. I usually feed satisfied about a patient whenever fever produces sleep, and always feel uneasy when fever produces insomnia. I consider it very unfortunate always when the patient will not sleep except when aided by medicines, and I am very slow usually to resort to medicines of this class. It is generally believed, and I am in sympathy with the belief, that milk is the best food for typhoid fever, and I usually prefer sour milk, or buttermilk. This may not be an ideal food, but it seems to be the best that I know of. It seems to produce less nausea and less evidences of indigestion than anything else in my patients. It is less likely to produce tympanites, or diarrhea, than any other form of food. This may not be correct but I believe that it is. I suppose that I give buttermilk as food in nearly eighty-five per cent of my fever cases. I don't believe that I use sweet milk in over ten per cent of these patients. This, apparently, ought to be the best food, especially if it is fresh and properly diluted with lime water and properly given. I very often add to it a little carbonated Harris Lithia Water. This makes it very palatable food. It is my favorite in fever cases next to buttermilk. It is seldom that I give over half a glass of milk, either buttermilk or sweet milk, every three hours while the patient is awake, and my instructions usually are to keep

this up during the night, if the patient is found to be perfectly awake, otherwise it is not given at all during the night, that is as a rule. I can, however, recall many cases in which I have made exceptions to this. If sweet milk is given it should be taken very slowly, I often suggest giving it with a spoon. This will prevent large solid curds in the stomach, and will make the milk easier digested. The milk diet, even if intelligently used, will not suit every case. It will cause gastric disturbance that may annoy the case no little, possibly produce nausea, vomiting, tympanites and diarrhea. These cases, in my hands, have been very few, not over five per cent. I can now recall but a few such cases. The milk may be replaced by soups, or animal broths; when this is necessary we often have to rotate from one to the other, as the patient tires on this food quicker than on milk. I have gotten in the habit lately of using Armour's Beef Extract, when a substitute for milk is necessary. This is easily prepared and very palatable. If there is any reason why this cannot be given, I have prepared chicken tea, beef tea. I make this preparation as follows: take one pound of tender chicken, or a pound of tender beef, beat it up thoroughly, put it in cold water enough to float it, gradually heat to a simmering point for over an hour, then boil for five minutes. The addition of salt and pepper make it a very delightful and nourishing food. It is a prevalent practice among some physicians, when sweet milk is not acceptable to the patient to add whiskey. This is a practice that I abandoned a great many years ago, never to take up again. Broth made from beef, mutton, veal or chicken, with rice or barley or tomatoes may be, after it is carefully strained, given to patients, and it is often relished and apparently suitable. But as I have intimated, I always feel a little uneasy when my patients have to be fed in this way. Peptenoids and panopeptone have their value, and they are usually accessible and easily prepared and seem to be satisfactory in many cases. I have often fed cases through an entire attack of fever on one of these products

alone. During the cold months we are asked about oysters and oyster soup. Oyster soup is as safe as any of the soups I have mentioned, and often very well received by the patient. I have known competent physicians to give raw oysters to fever cases. I may be wrong, but I admit that I have a great prejudice against this method. I am also greatly prejudiced against raw eggs given, as they usually are in these cases, beaten up in a glass of milk, often with whiskey and sugar added. Gruel, or any of the semi-solid foods, or milk shakes are equally as objectionable. Several years ago, with misgivings, I gave the white of eggs, and sometimes egg-nog to typhoid fever cases, but soon abandoned the practice. I believe anyone who can observe intelligently, and will observe can easily see the evident mischief that this class of food often produces. It is a practice with some, and I have indulged in it myself to some extent, to give food every hour or two, but I have abandoned this method. You are likely to overdo the thing when you do this, and if we make a mistake at all in feeding a case, it is better to under-feed than to over-feed. A half glass of broth or milk or soup too much may cause a disorder that it will take days to correct.

Water should always be given freely. It will eliminate better than anything else the waste products that accumulate in the system. It should always be given at stated intervals if the patient is not thirsty; but as a rule he should never be disturbed when asleep. If he does not care to take it freely he ought to be encouraged to do so. Usually I have a glass of ice water on a table by the bed, so the patient can take it ad libitum. If he neglects to take it himself, or is delirious, I have the nurse at least once every hour to give him a drink, and always note the amount taken in twenty-four hours. Usually a man weighing 150 pounds, during the active fever period, can easily take fifteen or twenty glasses in a day and night without any feeling of discomfort.

I often give lemonade, really I suggest it in nearly every case. I give the pure lemon juice and water, I seldom add sugar, as sweet lemonade causes flatulence, and I have known it to produce nausea, vomiting and diarrhea. The juice of a lemon in a half glass of water, three or four times a day is very refreshing and is considered acid enough in fever cases.

Alcohol has a very limited use in the treatment of typhoid fever. Occasionally I give it, but always have a specific reason for doing so. I never have believed that it is in any sense a very valuable heart stimulant, and never use it for this improbable action. It is not a heart stimulant proper, but may be so indirectly, like morphine, or any drug that has a tendency to quiet the nervous system. As a food it is of very little value. I have seen cases that were very restless and nervous and wakeful that whiskey would quiet and soothe when nothing else seemed to do well. I have also seen it quiet delirious patients, when other means failed. These cases are very few, for as a rule, it causes more nervousness, more irritability, more insomnia and more delirium. If it produces sleep and quiet and moisture of the tongue, it is indicated. Usually it makes the tongue drier, tends to wakefulness, restlessness and delirium. The number of cases of typhoid fever in my practice, where alcohol is indicated, will not exceed ten per cent. In severe hemorrhages, or in perforation, or in fact anything that causes a sudden depression of an already enfeebled condition, alcohol might be given to advantage. When the nervous system has become exhausted, and muscular weakness has come on gradually, and is well marked, alcohol is not of very much value. I always give fever patients who have passed the age of forty-five more whiskey than younger subjects, and if I find that the patient has been in the habit of taking a great deal of whiskey regularly, prior to his attack of fever, it is never withdrawn abruptly, but continued as the case indicates. It certainly, in such cases, requires more than in a person who is young

and who has had temperate habits. In people past middle life, stimulants, especially strychnine and whiskey are of great value. They are especially so with the aged, but we see typhoid fever very little in this class of patients. A great deal of injury is often done in giving young people alcohol in the active fever stage. Among my cases it has almost invariably produced more weakness and more irritability and more raving and loss of sleep than I believe would have existed without it. When I give it at all, I give few doses and large quantities. I have seen cases where fright and worry and anxiety were about to jeopardize my patient's life. In these cases nothing seemed to act better than a good drink of whiskey occasionally. It does away with that feeling of disquiet, and that feeling of fear and danger that often saps a great deal of the vitality of our patients. It is in this class of cases that we are often deceived about its real value as a heart stimulant. We find there a fast, irregular and weak pulse, a good dose of alcohol will make them slow and regular and full. Morphine would have a similar effect, but is not as desirable for reasons well known. I often give champagne for nausea that occurs during any stage of the disease.

Cold water is the best means of reducing high temperature. This is now generally admitted by all physicians. We never resort regularly to the tub bath, it is only in a small per cent of my cases that we have used it. It is well enough to only use the tub bath when the cold packs and cold spongings are insufficient. Ninety-five per cent of my cases are treated by cold spongings and cold packs, and usually I have very little difficulty with these means in keeping the temperature in the neighborhood of what is satisfactory to me. I use the cold pack in about thirty per cent of my cases. My method of using it is as follows: The bed is protected with an oil sheet, on that is placed a woolen blanket, on that a wet sheet of the temperature of 60 to 65 degrees, Fahrenheit; the

patient is put on that and it is neatly and closely folded round him, then the blanket is fixed the same way, with a cold towel round the patient's head. This process is repeated about every fifteen or twenty minutes until the temperature is at a satisfactory point. As I say, this method is resorted to in not more than thirty per cent of my cases. I never treat a case of fever without using the cold sponging, and it is not always either that I advise ice cold water for this purpose. Sometimes the water has a temperature of 90 degrees, and sometimes, of course, as low as 60. It is a favorite plan of mine to add alcohol or vinegar or ordinary common salt to the water used in this sponging. Rubber bags filled with ice applied to the head or abdomen sometimes is a method of abstracting heat from the body; that I use. It is not sufficient in severe cases. There is no doubt that they are capable, if they are properly used, of taking from the patient a great deal of heat that he otherwise would have. The nurse is always instructed to remove the ice bag when the patient drops off to sleep, especially is this precaution necessary in cases where the fever is on the decline and is apt to approach the normal. In such cases it would be sure to produce a sub-normal temperature and possibly bronchitis, neuralgia, or some lung complication that might cause us anxiety and possibly endanger the patient's life.

The medicinal treatment of the disease has been greatly depreciated in the last few years, more so than it should be. Few of us conduct a case through without prescribing several different drugs, with no idea of aborting or curing it, but to modify symptoms and prevent complications. We will take up systematically the drugs used here. One of the oldest and still one of the prominent drugs used in typhoid fever is quinine. It has been used in this disease ever since the two have been known, and to-day in the hands of some it is a popular antipyretic. It has been my practice in the beginning of all fevers to give quinine in large doses when the fever intermits, that is when the patient has fever only in the

afternoon, and it reaches normal in the early morning. With the proper diet and thorough elimination and rest, with large doses of quinine, if the fever continues for five or six days, I conclude in all probability that it is a typhoid attack, unless it is due to some local cause that is easily recognized. In the latter part of an attack of typhoid fever, if the patient is not very much exhausted and the fever reaches normal in the morning and runs up a degree and a half to two degrees in the afternoon, quinine will often shorten these afternoon fevers, but whether it favorably influences the pathological lesions that produce these afternoon fevers, is questionable, and whether you really hasten a satisfactory convalescence is still doubtful in my mind. I do not invariably follow this plan now, but at one time in certain cases, it was almost my routine practice. I always give it in large doses at night, it acts better then. It never does any harm in any case, even in large doses, if it produces sleep, but I am rather doubtful at all times the wisdom of its use, if it produces insomnia, I mean in typhoid fever. Antipyrine, phenacetine and antefebrin have all been used to reduce fever. Some of them are used now but to no great extent. It is extremely uncommon that I prescribe any of these drugs at all in this fever. They are invaluable in fevers of short duration with the exception of pneumonia. Certainly all fevers of long duration do not call for this class of drugs.

There is unquestionably a great deal in the antiseptic treatment of the disease. It does not in any way, so far as I have been able to see, cut short its duration, or have any tendency whatever to abort or cure an attack, but it will relieve or modify very important pathologic conditions that cause ugly symptoms. A great many antiseptic drugs have been recommended, but I am inclined to believe that there is not, among the best ones, so very much indifference in the effect. I have used calomel, carbolic acid, tincture of iodine, turpentine and salol more than any other drugs. In the beginning of a continued fever, if I anticipate typhoid, I have good doses

of calomel, enough to bring about a decided physiological effect. After the first few days, it has not been my custom to use it, although I have used the drug in all stages of the disease. When a constipation is present, I have prescribed one-tenth of a grain of calomel every hour, or every two hours, or every three hours until the bowels act. This has not been my custom in the last few years. I usually recommend the use of enemas. I would not, however, criticise any doctor who would have a desire to follow this plan that I have practically abandoned. The carbolic acid and iodine that were so popular fifteen years ago have not been used in my practice for several years. When I use a drug at all with the hope of getting an antiseptic action of the bowels, I use salol. As I have said, it may not be any better than the others, which have equally as good reputation, yet it is the drug that I use. It brings about the results that I give it for, namely: it flattens the bowels when tympany exists, it checks diarrhea, it brings down the temperature, and makes the evacuations almost odorless, it causes very little disturbance of the stomach, and its administration carries with it as little danger as that of any drug. I usually give it in powders, and I have not modified my plan, so far as the quantity is concerned for several years. When I select salol as a bowel antiseptic, I give it in much larger doses than that usually suggested in most of the text-books. My maximum quantity to be given in the twenty-four hours was formerly about sixty grains. This quantity is in most cases sufficient, but in nearly half of my cases where the temperature has a tendency to run very high and where there is a considerable amount of tympany and a decided tendency to diarrhea, I often give as much as fifteen grains every three hours, and in a few cases I have given as high as twenty grains every three hours. There is a plenty of authority now to justify this practice, but there was not when I first adopted it. I can recall very well that I have often instructed nurses not to put on their charts the quantity of salol given, for fear that my plan might be

considered too radical. I don't know that I have ever given over one hundred and twenty grains in a day and night, but as I have said, I reach this amount occasionally. In doses of this kind it is decided antipyretic. It should never be given in this quantity unless the conditions that I have mentioned exist classically. Recently experiments have established facts that have been a source of gratification to me and have strengthened my belief that salol is a good disinfectant for the intestine, possibly the best.

Retained urine is a common thing in typhoid fever, and it is commonly known among physicians now that it does in a great majority of cases contain many typhoid bacilli and that they are often re-absorbed, and that this is one of the sources of re-infection, or auto-infection. I have never demonstrated it, but it has been shown by apparently reputable observers that forty grains of salol in twenty-four hours will perceptibly lessen the number of the typhoid bacilli in the urine, and that eighty grains per day will almost eliminate them entirely.

I am greatly prejudiced against what is usually known as the eliminative treatment in typhoid fever. I mean alimentary elimination. I have already mentioned my ideas of the elimination in the treatment of fever cases that is necessary. If the bowels are thoroughly washed out during the first few days of the attack, I seldom, if ever, recommend the further use of alimentary eliminatives. I know theoretically it is a plausible plan, and it looks like it would be well enough, when you give drugs to disinfect the contents of the alimentary track, that it would then be wise to wash it away, that is the exudate, the sero-purulent fluid from the ulcerated surface of the bowels. This is a beautiful theory, but in actual practice it will not do. I hope I will not be considered discourteous or dogmatic to depreciate in any way the opinion of others, but I am so convinced that purgatives, I mean active purgatives, during the second and third week of typhoid fever is so commonly the cause of mischief

in my cases, that I am actually afraid of the procedure. I never propose again to take, or share the consequences, or responsibilities in any case where this practice is insisted upon by my associate. My cases have never done well with such treatment. It is certainly in my opinion, not a rational procedure.

The management of certain symptoms and complications, such as headache, insomnia, delirium, vomiting, diarrhea, constipation, and hemorrhage, deserve our consideration. I will pass over these headings briefly. For headache, unless it is a very severe form, medicines are not indicated. A cold ice bag to the head, and sometimes hot applications will relieve it. It usually passes off after the first week. It is always due to improper elimination, or indigestion, or assimilation, or diet. As soon as these functions are better established, the headache passes away. In only a very small per cent of cases does it continue after these corrections have been made. When it does, I am in the habit of giving some simple remedy, like tablets of antikamnia and codeine, a few of these are usually sufficient to relieve the most obstinate cases. Insomnia in typhoid cases always gives me great concern and anxiety. These cases, so far as I have observed never do well—a large per cent of them die. Hypnotics here, as a rule, are unsatisfactory, their action is very uncertain. Opiates, one of our most reliable hypnotics, will only produce sleep about one time in ten in my cases. Chloral, about four times out of five. Trional and sulphonal about one time in three. Whiskey about one time in twenty. After the best of these act beautifully, I never detect the refreshing effects from them that I anticipated. When I leave my patient tossing about all night in a semi-delirious state, getting a little nap here and there, making a total of some two or three hours, I find that his condition is more satisfactory in the morning than if I had produced an artificial sleep of seven or eight hours. This hardly seems plausible or rational in such cases, but such has been my experience.

It is seldom that I use hypnotics in typhoid fever. In delirium I have never found any drug that is very satisfactory. Possibly bromide of potassium is the most satisfactory of them, although I have used valerian, dover's powders, whiskey, and hyoscine. The hyoscine did not come up to what I expected. In about five per cent of my cases large doses of whiskey act very well, in the remaining cases it seems to aggravate the condition. Hot sponge baths with a great deal of friction, sometimes has a very soothing effect. In vomiting usually one drop of carbolic acid in a teaspoonful of lime water and cracked ice will act satisfactorily in a great majority of cases, in connection with a mustard poultice on the stomach and the suspension of diet and drinking for a few hours. If this is not sufficient when properly employed a glass of water at an ordinary temperature should be given. Sometimes this sticks and relieves the intense thirst that very often accompanies these attacks of nausea. I have often used hypodermic of morphine in such cases. The remedy, however, that will control the largest number of cases is champagne in a little crushed ice. Cocaine and bismuth in a great many cases act beautifully.

Tympanites is usually due to two distinct causes, one is amenable, the other is not. When the swelling is due to fermentation of products that lie in the alimentary canal it is of trifling consequence and can usually be remedied by antiseptic measures and a slight laxative and correction in the diet. But if it is due to paresis, that comes on in the latter stage of very severe cases, it is entirely a different proposition. This means almost sure death. When we feel confident and have every reason to believe that we have fed our case intelligently, and that there is nothing remaining in the alimentary canal that would produce distention by fermentation, and our patient shows all signs of weakness, like delirium, weak pulse, and sagging of the eyelids, with extreme tympanites, we have a condition to deal with that is very dangerous and one that cannot be relieved. When the

tympanites is due to paresis the use of turpentine and large doses of strychnine are about the only things that can be done. Enemas and purgatives and laxatives seem, in these cases, to aggravate this condition rather than relieve it. The use of the long rectal tube has been used in many of my cases, but with no very great benefit. I have seen a few cases that were restless with a considerable delirium and evidence of pain that were brought about and continued for days at a time by the retention of urine that had been overlooked. This is a mistake that ought never to be made. It is a usual practice of mine, if I have a case of fever that is extremely ill, and especially if they are delirious, to run my hand over the region of the bladder and examine especially for this common complication. I can recall many cases where this condition was overlooked.

A persistent diarrhea, one that cannot be controlled, always alarms me. The old idea that two or three or four stools in the twenty-four hours were beneficial and should be encouraged, is entirely contrary to my idea of the subject. The mortality of my cases that have had this amount of diarrhea for ten days at a time has amounted to fully twenty per cent. On the other hand I am yet to see a case of typhoid fever die that was constipated. When by ordinary means we can keep the bowels from acting for three or four days at a time, the mortality in this part of the country will not reach five per cent. This has been my experience. After the first week to encourage what is supposed to be a harmless diarrhea and the persistent use of alimentary eliminatives are methods that I believe are dangerous. To encourage peristalsis when the bowel is congested and inflamed and ulcerated is, as it appears to me, very irrational. The retained secretions of the alimentary canal that concerns, really alarms, so many physicians, if let alone does very little harm. This canal is in the habit of taking care of this kind of material. When it is disturbed the poison must multiply, and absorption must take place, for our patient usually

has a quicker pulse, a chilly feeling, more fever, more tympanites, more restlessness and more delirium.

I usually give bismuth and opium combined with salol for these cases of diarrhea. I never let the bowels remain unmoved for ten days to two weeks at a time, as some do, although I have seen many cases of this kind, and have never yet noticed anything to regret about the practice. I encourage the bowels to act every four or five days during the second and third and fourth weeks. To do this I recommend enemas of water, sometimes I add a little glycerine of turpentine.

When I meet with cases of hemorrhage, I am always alarmed. It is a much more serious complication than the text-books lead us to believe. Fifty per cent of my cases have died with a history of hemorrhage. It has been suggested when hemorrhage occurs during the first week, that it is not a bad sign. I have never had a case where it occurred during that period. Treatment in such cases is very simple. I give opiates freely, keep the patient absolutely quiet, an ice-bag to the bowels, and almost a suspension of food for a day or two. The opiates should always be given in a liquid or powdered form, and in fact all medicines in a severe case should be given this way. I have observed at least a dozen times evidences that the alimentary juices were unable to dissolve capsules or pills. Some few years ago I drifted into the habit, in cases of diarrhea or hemorrhage of giving the prepared pill of opium and nitrate of silver, and in a large per cent, of my cases I noticed no benefit whatever. When I would change to some form of opiate that would certainly be absorbed, my patient would show the physiological effects of the opium immediately. I have never been able to observe any benefit from the administration of ergot, although it is usually given in my cases. Astringents given by the mouth cannot possibly reach the seat of the disease for many hours, and even whenever they do, their action may be doubtful. I usually encourage the plan, however,

of giving silver or lead in such cases. In cases like this where a tendency to collapse is present, the use of whiskey can be given with much benefit.

In the management of convalescent fever cases we have again to contend with the problem of how to feed our patient. When the temperature has remained normal in the afternoon for a week I give one reception cracker in half a glass of milk every three hours. If this is satisfactory and produces no harm, the next day I give two crackers in a half glass of milk every three hours. If my patient continues hungry and does not tire of this diet they are increased every day. The fourth day I give a soft boiled egg with toast three times a day in connection with the crackers and milk, and gradually increase the diet in this way. A patient can eat twice as much, without any evidence of indigestion or being overfed, by remaining in bed, consequently I keep my patients there for two weeks after I begin to feed them, then there is but very little cause for uneasiness about mistakes in diet after the patient gets up. I have often seen cases at the end of an attack when the fever was normal in the morning, but slightly elevated in the afternoon, fret and worry so much about eating that it would in all probability be responsible for this degree, or degree and a half of fever. In such cases it is well enough to give a few crackers and possibly a soft boiled egg and note the result. If it satisfies the patient, the fever is from a pathologic cause and not a nervous origin.

The Old and the New.

BY J. A. REAGAN, M.D., WEAVERVILLE, N. C.

In the early days of my recollection regular physicians were scarce, and all rode on horseback. The roads were so bad in this mountain section that a buggy could not be used, besides, a large part of the practice was in the night. There were no drug stores except in cities and large towns. The physician was expected to furnish all the medicine when he was called to a case. They had no stethoscopes, except straight ones made of hard wood—no fever thermometers—no hypodermic syringes—the first one I bought, or had seen, cost me four dollars in Philadelphia. No speculums except straight ones made of glass painted black, the outside, and polished bright inside, and women generally thought it awful to have to be examined with an instrument. The college course was two years. The mid-wife service, or practice, was done almost entirely by ignorant mid-wives, who followed the business, and prided in their success. If they found a case that they did not understand they were loth to give it up, and frequently held on until where the physician was sent for the woman died before he arrived, or very soon after. It was a remarkable case when a physician was called in. Even when I entered practice here, this was the case fifty years ago.

Now midwives are hard to find, the old ones are all dead, and the present generation have learned that work of this kind should be attended to by educated women who have studied medicine, or by regular physicians, either male or female. I will give a few cases that occurred years ago. Mrs. G. was at her confinement, as she supposed, and a midwife was called, and pronounced the case as ready to take place; began to give her teas of some kind; worked with her for three days and nights, and they called in another midwife, who said labor was working, and changed the teas, and

they both worked for another day and night. When her husband sent for me without consulting the *good* midwives. When I reached the place the oldest midwife had her sitting in a stout woman's lap. I asked the midwife what was wrong; she said nothing, that the child would be born in a few minutes, but she made no effort or manifested any disposition to turn the case over to me. I said to her they have sent for me to take this case, and I wish to examine the woman. She said, "Well, you can do so, but the child will be born in a few minutes." She got up and I took her chair; made an examination; found the woman so swollen by constant handling the parts for days and nights that the child, if labor was on her, could not be born with safety to the woman. I had her put to bed, and flannel cloths dipped in strong oat oze applied to the parts warm. She never had a pain after I put her to bed. This was about 3 o'clock p. m. I stayed all night. The next morning the swelling was gone, the womb closed, and she felt rested. I left; told her husband, if I left home any distance I would leave word where I was, so he could find me. Three days after I left, I was called to a case ten miles from my office. I went by Mr. G.'s to let him know where he could find me if I was needed, and found the woman up and doing her house-work. She said she had not had a pain since I left. Eight days from the time I was called she waked her husband, and told him to go for her mother, about one-half mile, to stay with her till he could go for me. When he returned with her mother, the child was born. She never called in a midwife again, is still alive, has grown children, and is in good health.

Another case. I was called up at midnight to go three miles to a case in a great hurry. The midwife was stalled, the man said. I had my horse caught and saddled while I put on my clothes. We started in a fair gate, and in one and a half miles we met a horseman in a lope, hollering hurry up, the woman will die. We urged our horses to a fast lope, and one mile further met another man, horse at full speed,

who said, "For God's sake, hurry." Well, we did. A few hundred yards before we reached the house we met a woman, bare-headed, saying hurry, hurry. When I reached the gate I jumped off; did not take time to hitch my horse; ran in, and said to the midwife, What is the matter? She said, "The womb and all is coming." She had her hand pressing against the child's head, and her feet propped back against something. She had held the child back until they had gone for me. Well, I relieved the good midwife, took her place, and immediately the child was born. She had mistaken the amniotic sac for the womb, but she had pressed the child's head so long that it died, and the woman lost her health, although she had one or two children afterwards. But never had another midwife so far as I know.

Another case to which I was called. The wise midwife took the breach presentation for the face, and it was but reasonable to suppose she made a mistake in regard to the mouth. So she injured the child rather seriously in her manipulations.

To show what a woman can stand in this mountain section of our State: I have known women to work in the field all day, and have a child at night, and in one case a woman was confined at night, and the next morning got up and went at least one hundred yards to a spring and brought up a bucket of water, bare-footed, when there was frost on the ground. She did her own cooking regularly on without help. No sickness followed.

I was called to a case in an adjoining county, where there were four midwives, and one so-called doctor. One arm of the child was born out night, the next day they started a man for me. I was some eight miles from home with a sick man. The man they sent went back, and they sent another after me. I reached there in the night. The doctor and the midwives were all sitting around the fire—it was in the winter—doing nothing. As soon as I could warm my hands, wash them with soap, and oil them, I put the arm back, turned the

child and delivered it at once. This poor woman had lain for twenty-four hours in that condition. She and the child lived, but were both in a feeble condition for some time.

I was called in haste to attend a case. I asked the man what was the difficulty. He said, "I do not know; the midwife says she does not know, but to bring you quick." My horse was saddled, and I was ready to go to see another case, but went with him at once. It was a four-miles ride. We rode fast. When I got there I asked the midwife what the trouble was, and received the usual answer, "I don't know." As soon as I could cleanse my hands I made an examination, but could not reach the child. I supposed the child was crossways. I prepared my hand and left arm, entered the hand, and put my right hand in the front of her and found the head outside of the pelvis, down at least four inches—had drawn the abdominal muscles over the bone. I pushed the head up, and into the pelvis, and the child was born at once. I never saw a case of this kind before or since, and I have not been able to find one reported. I have read the English, French, German and American works on obstetrics, and have failed to find a single case reported.

I have had a very large obstetrical practice extending over a period of fifty years, and have tried to keep up with the advancements and improvements. Many are of great advantage, while in some cases there is a fraction too much done after the birth of the child. I like everything done decently and in order. Cleanliness is of the greatest importance in all things, but especially in obstetrics. Things are now changed, and have been for a number of years. Physicians, and not midwives, are called to obstetrical cases. The day of ignorant midwives is a thing of the past. For this we should be thankful, for the sake of the women. Now we, seemingly, have everything that a physician needs to make him what a physician should be: education before admission to a medical college, four years before he gets his sheepskin, then medical examining boards in all the States, microscopes and chemical

apparatus for examining doubtful cases. I am glad that while they call our State Rip Van Winkle, we were the first to institute examining boards, and the first to interdict spitting on sidewalks and in public buildings. *Labor omnia vincit.*

The Future of Surgery.

BY H. S. MUNROE, M.D., DAVIDSON, N. C.

The history of surgery in the nineteenth century is the most interesting part of medical literature. The progress made is wonderful, and far beyond the expectations or even the dreams of the old masters of the art. It has attracted the thought and labor of many of the brightest men in our profession, who earnestly devote their talents and their lives to the advancement of its cause. The art has gradually advanced; many new discoveries, based on long scientific study, have been made; till to-day it is indeed a science, for the greater part of its work is based on scientific facts. With such a wonderful past leading up to the remarkable present, with all its achievements, we are prone to wonder what the future will be and what there is left for us to do to add to the glories of surgery.

The present condition of surgery gives us opportunity for successfully dealing with the great majority of surgical cases, and for saving the lives and relieving the suffering of thousands who were in olden times allowed to die or live lives of pain and misery. The introduction of anæsthetics, the antiseptic method of operating, and the modern aseptic technique, along with a more thorough knowledge of surgical conditions, have broadened the field of surgery. The modern well-equipped hospitals all over our country have greatly increased the proper equipment for carrying out the work successfully. With such a status of affairs we are apt to think that surgery is already a perfected science, that there is no more in store for us, and little room for progress. But there must be a future, and it will reveal many things of which we can not now conceive. It is not my purpose to try to follow the example of Jules Verne, many of whose prophecies came true, by presenting visionary images and seeming impossibilities. Such things are interesting to think of, but are of no practical value to scietific men. I wish to mention some of the

problems that confront us and point out the most important needs as we see them at the present time. I am indebted to Dr. Keen of Philadelphia, Dr. Senn of Chicago, and Dr. Tiffany of Baltimore, surgeons of national reputation, for personal letters giving their opinions of our shortcomings and the greatest needs of the surgeon to-day.

Sepsis is the worst enemy with which we have to deal. Since the time of Lister we have been able to combat it more successfully, but it still remains the dreaded foe of the operator. The means at our command are not always used, or are often employed carelessly and in an ignorant manner. Every practitioner who attempts to do even the minor surgical operations should realize the importance of proper cleanliness in every case. A surgeon is a dangerous man if he does not take all the precautions for the prevention of sepsis, and make himself thoroughly familiar with all the knowledge now at his command. It is true that sometimes cases carelessly operated upon will recover with no ill results, but such success is a sign of the goodness of nature instead of a good surgeon. Only continuous success in a large number of cases is proof of good and efficient work. Dr. Tiffany considers the four greatest needs of surgery to be, (1) cleanliness, (2) more cleanliness, (3) continued cleanliness, (4) operative dexterity. These four great needs of our profession can now be accomplished by patience and practice.

The study of antiseptics deserves our special attention. They have served a mission but are far from accomplishing the good we hope to come from them. With our knowledge of bacteria, we need more efficient germicides that will kill the infective organisms with certainty without devitalizing the living cells. We now have no certain and effective method of converting already infected into non-infected wounds. Aseptic surgery is triumphant, but when a large suppurating area is present we are dependent largely upon the human organism to combat it. Our germicides and antiseptics do some good but are far from effective. Is there not some

drug or serum forthcoming to solve the problem? So far the antitoxins have proven unsuccessful, but in serum-therapy there probably lies hidden a great aid to the surgeon. Is there not some serum to be discovered that can immunize men to the pyogenic cocci or else antagonize them and their toxins when present? Is it not possible that serum-therapy will revolutionize the whole realm of sepsis and replace the long and tedious preparations for tedious work? It remains for the future to decide.

Success very often depends upon the judgment of the operator. Every surgeon must think for himself. Too often his conclusions are fallacious and the results detrimental to the welfare of the patient. To know when and when not to operate is an important element in the future of surgery. Many lives are lost annually, though not often reported, because of an unwise or untimely use of the knife. On the contrary, the postponement of surgical aid causes many patients to grow worse until is too late to save them. Such is the common experience of every physician. There is a tendency for too much surgery with too little thought of the danger connected with it. In this surgical age it is often a hard question to decide whether or not interference in indicated and we need more light and more accurate means of coming to definite and satisfactory conclusions. It is our duty to humanity to make a more thorough study of the proper indications for operative measures in every obscure case before the patient is subjected to the dangers connected therewith, or denied the benefits to be derived therefrom. At present we are far from perfection in this line and many mistakes are made by most conscientious men.

Chloroform and ether have long given us good and efficient methods of producing general anaesthesia. The mortality from their use is low, yet in certain individuals and in prolonged operations, the anaesthetic constitutes an element of danger which is far from satisfactory. A patient under profound narcosis from either of these drugs is always on the

border line of death and is unsafe unless in the hands of an experienced anæsthetizer. We need a safer anæsthetic; one which will produce sleep and complete loss of sensation without depressing the vital centers of the individual. It might be used hypodermically, by mouth, or by inhalation. The hypodermic method would furnish us an accurate means of estimating the dose administered, for by inhalation we never know how much is absorbed.

Shock is another condition which is often not overcome by all the means at our command. The patient may die from the shock of injury before he can react sufficiently for surgical aid, or he may never be made to react from the profound shock so often following prolonged operations. Too often do we stand by the bedside of a patient to see him gradually sink away regardless of all the powerful stimulants and other remedies we may administer. We have learned much about the cause and pathology of shock, but there is a great need of better and surer ways of preventing it and for some remedy to bring about a speedy reaction in case it occurs. Is there not some remedy to be devised by which the vasomotor system can be more powerfully stimulated, and the whole nervous mechanism made to respond to its stimulating effect? Atropin and adrenalin are steps in the right direction, but do not meet all the indications.

The various kinds of tumors constitute a class of surgical troubles of which we are ignorant. There has been much investigation made of the structure of these growths, and we now know there is a great variety of them affecting all ages, sexes, races and classes. But we do not yet know the cause of such growths, their exact nature, or their origin. Bacteriology has as yet given no satisfactory explanation. We have no means of preventing or combating them except by complete removal, which is often difficult. The malignant forms even defy removal, and are liable to return in their original nests or in other parts. The surgeon is hopeless when confronted with a large cancer, and his only prognosis

is that the patient is doomed to an early and horrible death. There is much room for investigation and much to be learned about the cause, prevention, and cure of both the benign and malignant tumors. If due to bacteria, we should find them out; if to some faulty local metabolism, we should know it; if to increased circulation or simple excessive growth of cells, we should not be in doubt of the fact; or if from some local inflammation or disease, we should recognize it.

Tuberculosis has been called "the Great White Plague," because of the vast number of deaths it causes annually. Koch years ago told us the cause of it, but he has failed in all his attempts to bring forward a cure. The tubercle bacillus is a very frequent and malicious visitor to all parts of the body. The pulmonary form falls into the hands of the physician, but the surgical lesions are common and hard to contend with. Lupus, or tuberculosis of the skin, which is so superficially located that all surgical remedies can easily be applied, and yet is so resistant, gives us a good example of what we have to deal with in tuberculosis of the deeper structures. The medical profession can confer no greater blessing upon humanity than by finding some practical and efficient way of curing tuberculosis in the lungs and other tissues of the body. Surgery has done her best, but no surgeon wants to operate upon a tuberculous area because of the unsatisfactory results which are sure to follow. We need an effective method of disinfecting areas which are operated upon, or some specific to counteract the action of the bacilli and destroy them. Tuberculin and tuberculol have done good in the hands of some, but they are not giving the results we want. The whole subject of tuberculosis is one of the greatest problems that confront both the surgeon and physician to-day. It yet remains for a man to immortalize his name by giving us a means of establishing immunity or of curing the disease after infection takes place.

There are numerous other defects and shortcomings in surgery. There is also a great deal known about the subject

at the present time, and enough to keep us working for years to master. Those of the largest experience and greatest knowledge are the best surgeons, but none are perfect, and there are many conditions for which nothing can be done. Year by year we hope these mysteries will be solved, and that the surgery of the future which we must help to make will be no less interesting and of as great value to our fellow men as has been that of the past.

Postoperative Nausea and Vomiting.

BY LAWRENCE E. HOLMES, M.D., ASHEVILLE, N. C.

Never remembering to have seen a detailed report on a series of cases with regard to post-operative nausea and vomiting, and feeling sure that at least some of the commonly accepted ideas on the subject do not coincide with personal experience, I thought it would be of interest to keep such a report of the cases operated on at the Biltmore Hospital, and by a study of same, try if possible to arrive at correct conclusions on the subject.

The observations in this paper, then, are based on the study of a hundred operative cases, the anæsthetic employed in every case being ether. On account of the great infrequency with which we use chloroform, I have a report of only 15 cases, which I shall mention separately. In these the anæsthetic was administered by several different doctors; the etherizations were all my own, and in every case the method was the same, viz., by means of a gauze pad five or six inches long and four or five inches wide, from sixteen to thirty-two layers in thickness (the number of layers depending upon the coarseness of the gauze used), placed in front of the mouth, at first several inches away, then gradually brought nearer till it rests on the face and is finally pressed down on each side the nose, so that the only air the patient inhales passes through the ether-laden gauze. After the patient is once thoroughly anæsthetized, the last precaution, viz., keeping the gauze pressed down on each side the nose, is not as a rule necessary to keep the patient in that condition. By thus gradually bringing the gauze nearer the face, the proportion of the ether in the inhaled air is so gradually increased that the patient usually passes into unconsciousness without a struggle.

One great recommendation for this method is its simplicity, for one always has some clean gauze on hand, and using a fresh piece every time insures cleanliness and avoids any possibility of infection.

The simplicity of this method is as advantageous to the patient as to the physician, for alarm is much less likely to be caused and fear more likely to be allayed by a plain gauze pad, than by the rather formidable and elaborate apparatus sometimes employed.

The time required to bring an adult fully under the influence of the anæsthetic by this method is about fifteen minutes, and the amount of ether required for this purpose is about four ounces.

I do not think I am wrong in saying that the general impression with regard to the cause of post-operative nausea and vomiting is that they are the result of the anæsthetic, just as post-operative pneumonia is so frequently and in most cases, if not in all, so erroneously attributed to the anæsthetic, when really these distressing after-effects are most frequently due to the constitutional effects of the operation itself, associated with the pathological condition present; the anæsthetic itself being, as a rule, a very secondary ætiological factor.

We know that nausea and vomiting frequently occur after operations done under spinal anæsthesia. These are commonly attributed to the constitutional action of the cocaine used, or else to the interference with the normal relations of the spinal cord. Though I have had no personal experience with this method of anæsthesia, and have had no opportunity of observing its effects and the sequence of events, it seems to me highly probable that these after-effects are in many cases the reflex manifestations of the shock of the operation itself.

We also know that nausea and vomiting are among the well-recognized symptoms of shock from accidental injuries, so why should this cause be eliminated when the injuries (operation) are intentional? Not that I wish to infer that shock as usually described, follows most operations, for as a matter of fact it is a comparatively rare sequel, but that there must be some systemic effect is only a natural deduction from our knowledge, imperfect though it be, of the extremely

delicate and complicated workings of the sympathetic nervous system.

It is also a prevalent idea that nausea and vomiting are more likely to occur and be more severe after the use of ether than chloroform. This is a tradition that deserves very thorough investigation, and can be settled only by a careful study of a large number of carefully recorded cases.

I realize only too well that the present number of cases is far too small to warrant any positive conclusions on this subject, but I am setting them forth with the hope that others may be led to make observations in the same direction, especially with regard to chloroform, for it is only by means of the careful record of many cases under different circumstances that any final conclusion can be justified.

The results in this limited number of cases are at least suggestive, and though in some directions were anticipated, in others were somewhat of a surprise.

The majority of the cases came into the hospital the day before the operation and were prepared in the usual way, the bowels being well emptied by laxatives and enemata. The ether was administered in the manner already described. In a very few cases, while "coming out" of the anæsthetic, but while still unconscious, the patient has vomited up some mucous collected in the stomach during the anæsthesia; the vomiting probably being the result of the reflex irritation of an undue amount of mucous in the pharynx and larynx; these cases in the classification, I have considered free from nausea and vomiting, for from the standpoint in question they were so.

I am not going to weary you with a lot of figures, but give you as few as possible, at the same time making my purpose clear. The operations I have divided into four classes, according to their nature, though of course a number of different operations have had to be included under one head. In many cases multiple operations were performed, such for instance as curettement, trachelorraphy, perineorraphy and hysterorraphy or oopherectomy and hysterorraphy with re-

moval of the appendix. In such cases I have classified them as accurately as possible, making the greater include the less (though it is not always easy to decide which is the greater and which is the less), keeping in view the main object of being able to draw correct conclusions from the cases presented. The four different classes into which, for the sake of comparison, I have divided these operations, are as follows:

1. Dilatation and curettement of the uterus.
2. Intra-abdominal operations on the uterus and adnexa.
3. Other abdominal operations.
4. All other operations.

In class 1, which includes also some cases of repair of the crevix and perineum, 84 per cent suffered from some degree of nausea and vomiting.

In class 2, including hysterorraphies, hysterectomies, oopherectomies, removal of ovarian cysts, etc., 76 per cent suffered from nausea and vomiting.

In class 3, including operations for appendicitis, in some cases suppurative, with more or less peritonitis, cholecystotomies, exploratory operations, etc., 52 per cent suffered from nausea and vomiting. With regard to the occurrence of vomiting in this class, in only about 16 per cent was it marked enough to be worth considering, and in only 4 per cent was it severe.

In class 4, among which are nephrorraphies and a number of operations on the male genito-urinary organs, 44 per cent had some subsequent nausea and vomiting, but in less than 9 per cent were these after-effects severe enough to be worthy of consideration.

We thus see that the nature of the operation has a very important relation to the after-effects. If we take all cases together, we find that 34 per cent were althogether free from nausea, and though vomiting occurred with almost equal frequency, it was only in 30 per cent of cases that it occurred more than three or four times.

For the sake of comparison, I will mention the fact that of the 16 cases of chloroform anæsthesia, of which I have a

similar record, including almost as many varieties of operations, only 25 per cent were free from nausea, and in only 38 per cent was the vomiting inconsiderable.

If we take an average of the time the cases reported suffered from post-operative nausea, we find that when ether was the anæsthetic, it was 5½ hours, when chloroform was used it was 22½ hours.

Among the cases reported, there were two operated on at two different times, ether being used one time and chloroform another; the operations, each time, being of a similar character. The first case was one of varicocele, ether being the anæsthetic employed, no nausea or vomiting following. Two days later, on account of some bleeding, the wound had to be re-opened, and this time chloroform was the anæsthetic used; nausea and vomiting followed, and were severe for 24 hours and quite marked for 24 hours longer.

The second case was one of uterine dilatation and curettement, followed by hysterorraphy; ether was the anæsthetic used; for five hours after the operation nausea and vomiting were present to a moderate degree. About six months later the woman came back to the hospital for a second dilatation and curettement. At her own request, chloroform was given, and nausea and vomiting followed, lasting for 36 hours.

In some cases nausea with vomiting did not occur for some hours after the operation, when it would be started up by drinking a few teaspoonsful of water, and in some cases last for hours.

The great difference in the frequency of post-operative nausea and vomiting in the different sexes is very striking. In this series, 70 per cent of the males were absolutely free from these after-effects, while of the females only 16 per cent were free. We should naturally expect the sex whose nervous equilibrium is more easily upset, to be more easily affected in this respect, but so marked a difference I did not expect to find. Yet this great difference alone would indicate the fact so often overlooked, that post-operative nausea and vomiting are more the reflex manifestations of the disturbance caused

by the operation, than the results of the anæsthetic itself, for if it were the anæsthetic alone, there is no reason why, as with an ordinary emetic, the results should not be pretty much the same in both sexes.

Another striking fact, which also goes to show that the ætiological part played by the anæsthetic is as a rule secondary, is that the amount of nausea and vomiting has absolutely no relation whatsoever to the amount of ether used. This is proved by the fact that the average quantity of ether used in all the cases in which there was no subsequent disturbance was exactly the same as the average amount used in all cases in which such disturbance was present, viz., 9 ounces. The average time consumed in each operation was just under half an hour. The most serious cases of nausea and vomiting usually occurred in nervous and delicate women.

From this brief and incomplete report, what conclusions may we draw?

1. That as a rule post-operative nausea and vomiting are less dependent on the anæsthetic than on other causes; of the predisposing causes, sex seems to be the most important, for other things being equal, women are far more likely to suffer from these after-effects than are men. What we speak of as a nervous disposition is also a strong predisposing factor; in one whose nervous equilibrium is on the balance, so to speak, the reflex after-effects are likely to be more severe and prolonged. This was particularly noticeable in some of the cases of this series.

2. The amount of post-operative disturbance does seem to bear a more or less definite relation to the nature of the operation, and the operations which are most liable to be followed by this disturbance are those on the uterus and its adnexa, and of these the operation which causes this disturbance most frequently, seems to be dilatation. This may be due partly to the fact that women on whom this operation becomes necessary have frequently suffered a great deal, and their nervous equilibrium is apt to be in a somewhat unsteady condition to begin with.

Next in order come oopherectomies, hysterorraphies, hysterectomies, etc.; then other abdominal operations in which the uterus is not interfered with and least upsetting of all are operations in which neither the abdomen nor the female generative organs are attacked.

3. The common teaching that the administration of ether is followed by nausea and vomiting much more frequently and severely than is that of chloroform, is not borne out by these figures, but of course no great weight can be attached to conclusions based on so small a number of cases. The higher percentage in this series of those suffering from nausea and vomiting, when chloroform was the anæsthetic, and the two cases in which chloroform was followed by much more severe after-effects than was ether, indicate that in spite of the fact that as a rule other things are more important than the anæsthetic in the production of post-operative nausea and vomiting, still the anæsthetic in some cases does play an important ætiological part, and that with some people the use of chloroform is more apt to be followed by these unpleasant after-effects than ether. That the reverse with some people is the case, is also undoubtedly true.

4. The proper preparation of the patient has much to do with the after-effects; and, more important still, is the after-treatment. Though in some cases it is an unnecessary hardship, it is a safe rule, at least after abdominal operations, to keep everything out of the stomach for 12 to 24 hours, for not infrequently, even several hours after an operation, the taking of even a very small amount of water will set up a very distressing nausea and vomiting, from which, up till that time, the patient had been wholly free.

Though the number of cases is too small to justify many conclusions, one thing I think it does show, and that is that the degree of gastric disturbance following etherization has no relation whatsoever to the amount of ether used; the fact that the average amount used in all those who did not suffer from those unpleasant after-effects is exactly the same as in those who did, proving this conclusively.

A Plea for Prompt and Thorough Action in Gunshot and Other Wounds of the Abdomen, with Report of Cases.

BY W. O. SPENCER, M.D., WINSTON, N. C.

When asked to contribute a paper on this occasion upon some surgical subject, it occurred to me that the above subject, being of more than ordinary interest to myself, would perhaps be as interesting to others as any topic that I could select, and should I fail to present anything new, I shall at least try to make very emphatic a few points that I hope to bring out, and I will be very glad to procure a full and free discussion of same for the benefit of us all.

It is a well-known fact, gentlemen, that the text-books by most authorities give us such a frightful prognosis in cases of this kind that we can not fail to look forward with some degree of trepidation in dealing with them. At the same time, as practicing physicians and surgeons, we are liable to be called upon at any time to treat such cases, and while I am fully aware that the gravest opinions have been rendered upon like injuries by men of eminence in military, as well as private practice, notwithstanding this, if I can succeed in dispelling from the minds of some of you the old accepted idea that all wounds inflicted in the abdominal viscera by gunshot or otherwise, are necessarily fatal, in the main I shall not feel that I have consumed your valuable time altogether in vain.

No man, when brought face to face with cases like these, can afford to give up in despair, and after administering a few simple remedies, await the setting in of septic peritonitis, or in other words, death; for I declare to you that in this day of perfected surgical technique and asepsis such treatment as that is a thing of the past.

To begin with, we should bear always in mind the causes of death of such patients. They are:

Hemorrhage, shock, primary or secondary.

Sepsis, followed by septic peritonitis, or gangrene with necrosis.

Intestinal obstruction subsequently.

We all recognize the fact that when there is perforation and the escape of effete matter, if left unattended, peritonitis will surely set up, and a fatal ending will result; so, when called to a patient with a penetrating wound of the abdomen, if shock or hemorrhage has not already destroyed the patient, we should at once, under thorough aseptic precaution, without delay, explore and ascertain the damage done and repair same. I unhesitatingly declare that an exploratory incision is almost absolutely necessary, for after the use of the probe, hydrogen gas inflation, etc., we can feel absolutely certain of the condition only after we have cut down and thoroughly inspected the wounded parts.

I am sure we all have our own individual method of procedure, but if you will kindly bear with me, I shall try to give you a few points that have proven very successful in my own practice.

To begin with, thoroughly cleanse the field around the entrance of penetrating missile, making the incision immediately through or to one side of wound, with the greatest care paring off or removing all tissue surrounding the point of entrance, in order, first, to remove all chance of there being any septic material left in abdominal wall through skin, fascia muscles and seriouscourts; and, secondly, because there is always a certain amount of shock to this tissue by concussion, which, if left, will more than likely set up necrosis or suppuration, which must give rise to trouble subsequently. For these reasons, I have abandoned the median line incision as recommended by many text-books. When there is evidence of concealed hemorrhage present, this should receive our first and prompt attention, under thorough aseptic measures, if possible, but if not possible, it should even then be attended to and controlled at once, conveying the least sepsis therein possible.

Upon entering cavity, a painstaking and systematic inspection of viscera should be made in order to find all perforations, and I would impress upon your mind the fact that we can not be too careful concerning this matter, for you recognize the fact that a single rent overlooked would cause all else to be useless. I beg leave also to make very emphatic the point of removing all tissue in track of missile, beginning at the point of entrance, for therein lurks sepsis, gangrene and every evil.

If perforations are found in stomach or colon, where we have sufficient room to make a double-V incision in long axis and close with Lambert's or any other suture, using silk or catgut. After approximating the various croats of viscera with interrupted or continuous sutures, passing through the serous, muscular and submuscuous, and into but not through the mucuous, then overlaying or fortifying this line of sutures by passing through and through the serous coat, on each side, thus fortifying your first line of sutures,—using fine silk continuous sutures for this.

Should the small intestines be wounded, it is best to follow a like procedure, provided, however, the caliber of the intestine is not too small to admit of a double-V incision, for if too much is cut away, it will be likely to produce stricture of the bowel, and to prevent this it is best to resect the bowel and remove offending tissue and close with a Murphy's button or end to end anastomosis.

The latter is very easily done where the operator is a good sewer, and is often necessary because we do not always have a Murphy's button at hand. We insist that great care should be employed in closing all rents or openings in the mesentery to prevent the bowels knuckling through and thereby causing obstruction of the bowels later. After a most careful study of the subject, to sum it all up, from observation and experience, we would arrive at the following conclusions:

(1) Control hemorrhage.

(2) If shock or hemorrhage has not produced death, operate as early as possible, for if delayed until peritonitis sets in, it will be too late; operate, if possible, early enough to prevent contents of bowels from escaping and becoming dry and adhering to the peritoneum.

(3) Diligently search for all perforations; one left unclosed will cause all your work to be useless.

(4) Close all perforations in manner described above, being very careful to leave no shocked tissue around track of ball or any that could possibly be septic.

(5) Thoroughly cleanse all escaped fœcal matter and blood from peritoneal cavity.

(6) Flush cavity thoroughly with hot saline solution.

(7) Keep just as small amount of bowel exposed as possible, and keep that covered with sterilized towels, wrung out of hot saline solution.

(8) Do not delay things hunting for the lost ball, especially if it has passed into the deep muscles of the back; make aseptic its entrance, and close with catgut sutures,—this will promptly close and will prevent escape of septic matter back into cavity in event of suppuration around where the ball is embedded. Should suppuration occur thus, the ball can be readily located, or by skyagraph, and then can be removed.

(9) Close with or without drainage, depending on conditions; in most cases close without drainage, leaving cavity full of saline solution 105 to 110 degrees, in order, first, to prevent shock to viscera, and second, to dilute such escaped material as may have been overlooked, which material the peritoneum will absorb after it is thus diluted.

(10) Give no solid food until all repair is complete.

(11) By all means follow the entrance of projectile, be it ball, shot, knife or any other implement. Make the septic wound an aseptic one by trimming away all possible septic or shocked tissue. If you will pardon me, I beg leave to condemn the puckering or purse-string method of closing a wound in stomach, bowel or bladder, though recommended

by some men of eminence; still as a routine practice it seems to me to be a pernicious one, unless you can be absolutely sure you have made the wound clean, and that there is no shock to tissue surrounding the entrance of missile, and of this we can not be absolutely sure, so my advice is to remove such tissue, for we can only then know that we have an aseptic field with which to deal. If you remember, gentlemen, it was the method above condemned that was used upon our Chief Magistrate, Mr. McKinley, and so strongly am I opposed to the method, that I went so far as to predict his untimely end, when I noticed the published technique of the operation, although everything seemed so favorable, and the autopsy did reveal an aureola of gangrene just at this point in the anterior and posterior gastric wall.

(12) If the solid organs of abdomen, liver, kidneys, spleen or pancreas be likewise injured, the same treatment should be followed, viz., control hemorrhage, trim out very carefully the track of missile, and either close with suture or pack with sterile gauze with counter drainage, and treat as an open wound.

I have carefully followed the above technique in the cases that have fallen into my hands, and I have never had cause to regret it, as thus far I have been fortunate in all cases entrusted to my care.

With your permission, I beg leave to submit the following cases:

Case No. 1.

Sam. R., white, age 12 years, on ..... 189.., while playing with an "empty" pistol, discharged it and sent a 38-caliber ball through abdominal wall, entering about half way between ant.-sup. spine and median line of left side,—coming from right hand ranging downward and backward. Upon opening abdomen found it had passed through descending colon just above sigmoid flexure, embedding itself in or behind deep muscles of pelvis posteriorily, striking ilium, it glanced and was lost.

On entering abdomen made incision through track and following course of the ball, removing all tissue that had come in contact with it, making a double-V shaped incision in long axis of colon, removing all tissue near track of ball, which might be infected or shocked, thereby causing necrosis or gangrene. This done, it was closed with Lembert's suture, overlaying or fortifying with peritoneal fold with continuous silk suture. Having thus treated the anterior wall, the colon was turned over and treated posteriorily in like manner.

The entrance into muscle was made as clean as possible. All escaped matter was cleaned out and cavity flushed with warm saline solution closed with through and through silkworm gut without drainage, leaving cavity full of saline solution.

The ball, having struck the bone at such an angle, glanced and was lost deep down in pelvis. It passed under or near the nerves supplying the leg, giving rise to pain and a slight impairment of motion, all of which gradually cleared up. I made no search for ball, and for several months it gave no further trouble, until later pain was felt upon evacuating the bowels. Upon examination, the ball was found lodged in rectal fossa above sphincter and levatiani muscles, which I removed through wall of rectum without closing opening. No further trouble; good recovery.

Case No. 2.

On January 27, 1902, was called in haste to see R. G., age 22, white; found he had received a wound with a 38-caliber pistol ball midway between umbilicus and pubis, 1½ inches right of median line. Attempted to probe for ball, but could not get below first layer of muscle, as they were overriding each other. I was in some doubt as to whether the ball had rebounded and fallen out or entered the cavity, but as we did not find it in the clothing, concluded the latter. I immediately ordered him carried to the hospital, and as quickly as possible made an incision just over track of ball, carefully

trimming with scissors all tissue surrounding the track before entering the peritoneum. Upon entering cavity seven perforations were found in the small intestines and two in ascending colon, passing through both walls, penetrating the (toenia coli) longitudinal ribbon muscular band. All perforations were closed in the manner described above (after removing all tissue with which the ball had come in contact), except in one place in the small intestines four punctures were found in a short curve; the perforations were so close together here and so bloodshot, I feared either sepsis, gangrene or stricture later, so decided to resect five inches of bowel and closed with a Murphy's button (medium size being used). The ball entered the psoas muscle, striking ilium, glanced and could not be located. The point of entrance was cleansed in the best manner possible with gauze and left to close itself, which it readily did. After closing the seven punctures, I was advised to stop, as the patient might die from shock, but being assured by my anæthetist that he was standing it very well, I proceeded to hunt for other punctures, and did find two, which were closed as the others. The intestines were kept covered with hot towels and as small amount kept exposed as possible, and whenever fœcal matter was found escaping, it was wiped off with aseptic gauze. Feeling satisfied that there were no more rents, the cavity was flushed out with gallons of hot saline solution. After arranging sutures for closing incision with through and through silk-worm gut, I poured from pitcher hot saline solution and closed abdomen as full as possible, without drainage. Convalescence was uninterrupted, little or no shock, temperature never over 99 deg. F., and passed button on the thirteenth day and in five weeks the patient went home. About three weeks later the ball began to give trouble; that was then located skiagraphically between ilium and psoas muscle. He was again anæsthetised and an incision made just over crest of ilium, hugging the bone closely to avoid opening the post-peritoneal fold. Upon reaching

the cavity a very tense abscess was found, the pus coming out with sufficient force to pass over my shoulder, indicating, of course, that there was no escape into peritoneal cavity. The ball was easily extracted with finger and found surrounded with infectious material, particles of clothing, etc., which had been carried through the entire cavity and contents, convincing me of the necessity of getting rid of all tissue in course of the ball. Washed out cavity and drained. Recovery unmolested from this. Three and a half years later health good, no trouble.

Case No. 3.

Clarence Freeman, colored, age 13. While out hunting a load of mixed shot was discharged from a No. 12 bore gun at close range in the hand of a companion, the load of shot entering the abdomen about midway between ant.- sup.-spine of right side and median line. This happened about four o'clock p. m., and I was called to see him at about nine p. m. I found he had been trundled in a wheelbarrow about three miles and placed in a dirty cabin. I ordered him carried to Slater Hospital. Dr. Hall, colored, gave the anæsthetic, and Drs. Summers and Hanes assisted me in operating. We found the opening through abdominal wall to be about three-quarters to one inch large, the shot having entered in a compact manner, there being only a few scattering perforations around. Entering the abdomen an incision diagonally downward inward was made from wound, likewise from the wound upward and out, trimming away all septic and injured tissue possible. The small intestines were found to be completely severed in two places, escape of abundant fœcal matter; after wiping away all this, but little hemorrhage was found, and we immediately proceeded to resect by first ligating each end of bowel with strips of gauze to prevent further escape of fœces. I resected some one and a half to two inches of each end of wounded gut, removing in all some six or eight inches of gut, taking out a V-shaped mesentery, closed one wound

with Murphy's button and one by end to end. Finding no other injury to viscera, the cavity was wiped out and thoroughly flushed with warm saline solution. In the mesentery a load of shot had lodged, and I thought it must be the entire load. The abdomen was closed with through and through silk-worm gut without drainage. For eight days everything moved on beautifully, temperature not rising to 100 deg. and pulse not over 85, but upon the eighth day the temperature ran up to 102 deg. with some tenderness at right ant.-sup.-spine; on the ninth day the tenderness was localized, and I made an incision at right-angle from middle of incision downward to ant.-spine, passed finger down behind spine and found embedded there one or two drachms of shot and shreds of clothing; removed, washed out and drained, and found no further trouble. Recovery was uneventful, passed button on twelfth day. Patient discharged in five weeks and health has been good since.

A Case of Dextro Cardia.

BY LYNN M'IVER, SANFORD, N. C.

Lorenzo Miller, age 36, colored. Father died of typhoid fever, mother died of tuberculosis. Has four brothers and three sisters in good health and one sister and two brothers died of tuberculosis.

Has had ordinary diseases of childhood, also diphtheria.

In 1894 was driving ice wagon in Greensboro, and train ran into wagon, resulting in a wreck. Has had right collar bone broken, injured spine.

Afterwards was in race for championship of State in bicycle riding. Won it, but says that he has never been strong since that time.

Had an attack of inflammatory rheumatism following this, lasting nine months. Was in bed most of the time. In about one year had skin trouble and sore throat. Took treatment at Hot Springs, Ark., four months, and came away relieved. Had an attack of malaria in summer of 1900-1901 and 1902.

In summer of 1901 was Pullman porter on N. Y. Central R. R., was in head-on collision then, but not injured except shock. While in New York City that year had an attack of unconsciousness and was taken up by ambulance and to the hospital; intern discovered the heart abnormality.

Several of these unconscious attacks occurred afterward, but none in the last two years.

In July, 1902, went on merchant vessel from New York to London, and while there had an attack with spine, but only lasted a few days.

He sailed more or less all over the East, when coming back to North Carolina in 1904, and since that time has been in feeble health. Since January, 1905, has had pain and soreness in right mammilatory region and shortness of breath and

some pain in back. Called in Dr. H. B. Hoyle, of Jonesboro, to whom we are indebted for this case.

Physical examination: Chest measure 33 in., apex beat 2 in. below and 2 in. to inner side of right nipple. Slight sensation over normal pulmonary region.

Percussion: Dullness beginning at fourth inter-castal space on right side and extending into liver. Dullness extending to the right and a little beyond the right mammilary line, on the inner side to the sternum. Slight dullness over normal region on left side on palpitation.

Fremitus.

On an oscultation mitral sound 2 in. below and 2 in. to inner side of RIGHT NIPPLE. Slight sound to left in normal position and feeble sounds in normal pulmonary region and aortic sound nearly normal.

Diagnosis.....?

Edible and Poisonous Fungi of North Carolina.

BY J. W. PEACOCK, M.D., THOMASVILLE, N. C.

The number of people in America who are interested in collecting mushrooms for the table is small compared to those in some European countries, where some cities owe their prosperity to the mushroom industry. The number, however, is increasing, and if a little more attention were given to the observation of these plants and the discrimination of the more common kinds, many persons could add greatly to the variety of their foods and relishes with comparatively no cost. The quest for these plants in the fields and woods would also afford a most delightful and needed recreation to many, and there is no subject in nature more fascinating to engage one's interest and powers of observation. Probably the larger number of persons, in America, at present interested in mushrooms, are chiefly concerned with them as an article of food, but a great many of these persons love to tramp to the fields and woods in quest of them just as the sportsman loves to hunt his game with dog and gun. The zest of the search, the pleasure of discovery, and the healthfulness of the outdoor recreation lend an appetizing flavor to the fruits of the chase not to be obtained in purchasing a few pounds of cultivated mushrooms on the market.

The general opinion of those acquainted with the subject is that mushrooms constitute a very nutritious and sustaining diet. Chemical analysis and personal experience indicate this. The chemist has shown that the dried mushroom contains from twenty to fifty per cent of protein or nitrogenous material. They may, therefore, be called a kind of vegetable meat and be used as a substitute for animal food. Like other vegetables, they are largely composed of water, which is from eighty to ninety per cent of the whole. In consequence of this they shrink greatly in drying and lose

much weight. The presence of so much nitrogenous material induces rapid decay and loathsome decomposition in them. It should also teach moderation in their use as food. A hardy meal on mushrooms alone would be about as reasonable as a dinner on nothing but beefsteak, and might be expected to be followed by similar ill consequences. Gormandizing is not commendable under any circumstances nor with any kind of food. And especially should it be avoided in mushroom eating, for the human system demands but small quantities of the nitrogenous elements which enter into its composition. The space in this paper will not admit of a minute description of many species, but I will try to describe the most dangerous mushrooms which we wish to avoid, and a few of the most common edible species of North Carolina. One is often asked the question: "How do you tell the mushrooms from the toadstools?" This implies that mushrooms are edible and that toadstools are poisonous, and this belief is very prevalent in the public mind. The fact is, that any mushroom that has a cap and stem is a toadstool, both names being synonymous. Hence we have edible and poisonous toadstools. There is no single test by which we might ascertain whether a mushroom is poisonous or not, such as the "silver spoon" test, or the "death cup." Two plants may possess the "death cup," and one be edible and the other poisonous, as in the amanita caesarea, edible, and the amanita phalloides, poisonous.

The question arises, how can we most easily tell the name of a given mushroom and whether it is edible or poisonous. All mushrooms bare spores which perform practically the same function as the seed of the higher vegetables. These spores vary greatly in color, shape and size. In consequence of this, we are aided very much in identifying any mushroom. A great majority of the gill bearing genera are divided into five series according to the color of their spores, to-wit, the purple, black, white, rosy and ocre spored. Besides these series, we have the tube-bearing, the hedge-hog, the coral,

the trembling, the cup fungi and the puff balls. Of these, the gill-bearing fungi are by far the most important. In identifying any gill-bearing fungus, we would proceed as follows, viz: first cut off the stem close to the pileus and place the pileus, gills down, on a piece of paper, white paper if the spores are suspected of being dark colored, or black paper if the spores are white; then invert a vessel over it to keep out all currents of air and let it remain from six to twenty-four hours. Then remove the pileus and you will have a spore print. Then having identified the color of the spore print, you turn to a good work on mushrooms and find a series corresponding to the color of the spore print and you find the genera of this series, and a specific description of the species. Thus by a small amount of reading one is able to find a minute description of the mushroom in question. In refering to various publications on mushrooms, I have often been confused. The times at which I have found certain mushrooms would not agree with the times named in the book. Also many mushrooms were described that I was unable to find in this state, and many were found that were either not described or very briefly referred to. As a result of this, I reported in a paper read before the last meeting of the Tri-State Medical Association, that I was unable to find the coprimus comatus, which is honored by considerable space in all mushroom books.

Of the five works I consulted, four of them stated that this mushroom was found in autumn or late autumn, while one stated that it was found in late spring and autumn. However, I accidently found a fine lot of them on the 22nd of last April, and several days following, which is somewhat earlier than late spring. This confusion is a result of the fact that all our works of this nature have been compiled by scholars who have studied fungi in the New England and Eastern States. Now I will try to describe a few edible and poisonous species most common to this section.

Amanita caesarea. This is the finest mushroom we

have. It has been known and praised from ancient times. The Greeks and Romans esteemed it as an article of food. It has been called the Imperial mushroom, Caesar's mushroom, the food of the Gods, Cibus, Deorum, Orange, Amanita, etc. It is also one of the most beautiful species we have. The plant is from four to seven inches high; cap two to six inches broad; the stem from four t o nine inches thick. The entire plant is yellow except the center of the pileus which is red, and the volva which is white. The pileus is ovate to bell shaped, convex, and finally expanded. The center of the expanded pileus is more or less umbolate and smooth. The margin is striate and sometimes curved downward. It is red in the center, fading to yellow on the margin. The gills are yellow and free from the stem. The stem is hollow, sometimes floccose, scaley below the annulus. It is very cylindrical and below it is covered by a large, white fleshy, sack-like volva, which stands out free from the stem like a cup, being attached only at the bottom. The annulus is yellow, large, membranous and hangs like a color from the upper part of the stem which is also yellow. The plant is first completely enclosed by the volva, when its appearance resembles that of an egg. Later, the volva ruptures and the stem elongates and the pileus gradually expands. The stages of development are shown in the illustration. This plant is found in abundance from about the tenth to the thirteenth of August. It grows most abundantly in old pine fields, usually where the land is red and gravelly or slaty. I have gathered over a bushel of them in a few hours. Great caution should be used in identifying this mushroom from the Amanita muscaria which is poisonous.

As our most poisonous fungi belong to the genus Amanita, we will consider them next.

Amanita muscaria (Linn). This plant is often called the Fly agaric, since milk charged with its juice is a good fly poison. It appears in August and persists till fall. It grows in mixed and pine woods, sometimes alongside of the

Amanita caesarea. It is a handsome plant as its pileus is colored very much like the Amanita caesarea. It is from four to six inches high, and the pileus is from three to five inches broad, and the stem is from six to twelve lines thick. Sometimes the plant is much larger. The pileus is convex to expanded and nearly flat in age. The margin is striate but not so much as a rule as the Amanita caesarea. The surface is covered with white scattered floccose scales, formed by the upper part of the volva breaking up as it is ruptured by the expansion of the pileus. These scales are easily removed, hence we often find plants more or less free from them after a rain. The center of the pileus is dull red shading to orange or yellow on the margin. As the plant gets old the color often fades out to almost white. The flesh, gilds and spores are white. The stem is white, cylinderical, hollow and stuffed and enlarged below into a prominent bulb. It is covered with loose, floccose scales, sometimes lacerated. The lower end of the stem and the upper part of the bulb are marked by concentric scales, more or less prominent and forming interrupted rings. This is formed by remnants of the volva clinging to the base of the stem, having broken from that part of itself that remained on the surface of the pileus. The plant in different stages is shown in the illustration. By considering all the points there should be no difficulty in distinguishing it from the Amanita caesarea. The active principles of this plant are the alkaloids Choline, Muscarine and Pilz-atropine. Choline is not very toxic but is converted into muscarine by oxydation. This is brought about by the decay of the mushroom, thus converting a comparatively harmless compound into an extremely poisonous one. Muscarine is most abundant in this plant, and is also found in the Amanita pantherina, the Boletus luridus and the Russula emetica. 1-600 grain of this alkaloid is a very dangerous dose for a man. Pilz-atropine resembles physiologically ordinary atropine and nutralizes to a greater or less degree the muscarine.

In this connection it might be well to consider the symptoms of poisoning by the Amanita muscaria, and the treatment. The symptoms usually appear in from one-half to two hours. The patient is seized with vomiting and diarrhoea with a pronounced flow of saliva, suppression of the urine, giddiness, loss of confidence in one's ability to make ordinary movements; derangements of vision succeeded by stupor, cold sweats, and a marked weakening of the heart's action. In fatal cases the stupor continues for two or three days and death ensues from gradual weakening and finally stoppage of the heart's action.

Treatment: Remove the unabsorbed portion of the mushroom from the stomach if this has not already been accomplished by vomiting and purging. Atropine is almost a perfect physiological antidote given in 1-100 to 1-50 grain doses hypodermically. Give internally two grains of potassium permanganate in two per cent alkaline solution, followed by an oleagnious purgative and an enema of warm water and turpentine. Push atropine heroically if the symptoms of the case warrant it.

Amanita phalloides (Fr.) This mushroom is known as the deadly agaric or deadly Amanita, or the destroying angel. It, together with its closely related species are of all the most deadly poisonous. This plant is pure white or yellowish, olive or umber. The volva also ruptures in various ways. It prefers oak or mixed woods, but is often found along roadsides and in pine fields. It varies from three to eight inches high; the pileus from two to four inches broad, and the stem from four to seven lines in thickness. The pileus is smooth with or without a few flakes of the ruptured volva; is fleshy, viscid or shining when moist; oval to bell-shaped, convex, and finally expanded. The presence or absence of the scales on the pileus depends on the way the volva ruptures. If the volva makes a clean rupture at the apex there are no scales left on the pileus; but if portions of the apex are torn away

they will remain on it. In the white form the pileus is white or yellow in the center and white on the margin. In the olive form the depth of color varies considerably, being darker in the center and fading to a light olive or grey on the margin. Again the entire plant may be dark olive or umber colored. The gills in all the forms are white and free from the stem. The stem is cylindrical, smooth and white, or dingy in the dark form; is stuffed in the young plant and hollow in age. The bulb is prominent and abrupt. There is danger in the beginner mistaking this plant for the Agaracus campestris and other edible forms, therefore, he should first become thoroughly acquainted with it so as to be certain to avoid it in collecting edible species. The toxic principle of this mushroom is phallin, the exact chemical nature of which is not known, but it is conceeded to be of an albuminus nature. It has a direct action upon the blood, quickly dissolving the corpuscles and causing the cerum to escape from the blood vessels into the alimentary canal, and thereby rapidly drains the whole system of its vitality. A person partaking of a mushroom containing this poison is not warned by any bad taste, as in case of the Amanita muscaria, nor do any preliminary syptoms appear until from nine to fourteen hours after. He is then seized with a sharp abdominal pains, cramps in the legs and other nervous phenomena, such as convulsions, lockjaw or other kinds of titanic spasms. The pulse is weak; nausea and vomiting quickly follow, and extreme diarrhoea, the discharges assuming the "rice water" condition. The latter symptoms persist, generally without loss of consciousness, until death ensues at the expiration at from two to four days. There is no known antidote for this poison. If the amount of the poison absorbed is not too large, it may wear itself out in the blood before the patient become exhausted. This wearing out process may be assisted by blood transfusion.

Cortinarius Carolinius (Pea.) I have reported in a former paper, that I thought this mushroom to be a new

species. So far, I have been unable to find it described in any of the works I have consulted. It belongs to the genus Cortinarius, and I have added the specific name of Carolinius. This pileus is convex when young, plain when old, two to four inches broad, brown in the center, shading off to lightbrown on the margin. The entire plant is glutinous when moist, shining when dry. The gills are rather broad, fawn colored when young, rusty brown when mature or old. The stem is stout, one to three inches long, three to nine lines thick. It usually has a brown colored zone around it a short distance below the pileus. The spores are brown, broadly eliptic. The young plant has a web-like veil stretched from the margin of the pilius to the stem. As the pilius expands the veil breaks loose from it and forms the brown-colored zone on the stem. This mushroom grows in old pine fields under the leaves from the middle of November to the last of December. It is much more abundant in some pine fields than in others. I have gathered a half-bushel basket full of them in a short time. It seldom breaks through the leaves, but pushes them up in small eminences which enable one to find them. It is flavored very much like Agaracus campestis. I have had three different mycofogists to eat it, and they all agreed in pronouncing it one of the best species they had ever eaten.

Agaricus campestris (*Linn*).—This is the common or meadow mushroom which is cultivated for the market. It grows in lawns, pastures, by roadsides and in gardens and cultivated fields.

There is no known poisonous species of the genus Agaricus. The species are closely related to each other, and in all the gills have a pink color when young, and gradually become dark brown or blackish brown in mature age. The pileus is silky or squamulose; the stem stuffed, glabrous, white or whitish, the spores are brown and eliptical. The color of the cap is commonly white, but with age it becomes a little tinged or dingy. The flesh is white, but sometimes exhibits

a tendency to become slightly tinged with red when cut and exposed to the air. Its taste is mild and pleasant. The gills are closely placed. The peculiarity in their coloration is so unlike anything known in dangerous species that it seems surprising that any should ever be mistaken for this mushroom. However, such mistakes have been made several times which undoubtedly must have been the result of gross carelessness. The stem is generally shorter than the horizontal diameter of the cap and about equal in thickness from the top to the base. The central portion is a little softer in texture than the external part. A collar encircles it in the upper part. Sometimes this is so thin and slight that scarcely any vestige of it remains in old plants. This mushroom, like many other plants that have been long and extensively cultivated, has developed into several forms which exhibit quite well-marked distinctive features. One of these is the Agaricus hortensis, which is brownish in color and frequently adorned with darker spots or scales. Another is the Agaricus griseus, which has a greyish silky cap. Another is the Agaricus alba, which has a white pileus and stem. It is our most common form.

Following I will give the dates when certain edible mushrooms are found in this State. Armillaria melea from the middle of October to the middle of November. It grows in clusters about oak stumps and aged oak trees. Puff balls are found from June to late autumn, and are most abundant in August. They are very good and there is no known poisonous species of this genus. The Tricholoma terrum fragrans, the Hygrophorus virgineus, and the Hydnum repandum are found from the latter part of November to the first of February. These grow in old pine fields under the leaves, seldom showing above them. These are all very good mushrooms, and do not disappoint you when they come to the table.

In collecting mushrooms for the table it is very important to abide by the following rules: First, be sure to gather the entire plant from the ground, so as to ascertain whether it

has a bulb; second, remember that all Amanitas have bulbs and collars, and that our most poisonous species belong to this genus; third, never use any mushroom that is in the button stage or old or the least decomposed; fourth, never use any Russala that is peppery to the taste—the same applies to Lactarri; fifth, never use any boletus when its flesh changes color in being broken or is bitter to the taste. There is one exception to this rule—the Boletus strobilo-myces strobilaceus, which changes its color on being broken, but is edible. The demand for mushrooms in this country will soon be as great as in Europe. The chief difficulty in the matter is the lack of sufficient general knowledge of the species or of the means of acquiring the knowledge necessary to make it safe to use them. Many of our species and the names of the plants are still in great confusion, due principally to the meagerness of the recorded observations on the characters of the fresh plants, or of the different stages of development.

Etiology of Cirrhosis of the Liver.

BY S. M. CROWELL, M.D., CHARLOTTE, N. C.

However many varieties of hepatic cirrhosis there may be, and whatever the *modus operandi* of the production of each morbid state, there is, in all forms, an increase of the interlobular connective tissue which in one variety becomes cicatrized and the liver is *reduced* in size, while, in another variety, the corresponding connective tissue becomes hypertrophic and the organ progressively enlarges. In both varieties the tendency is to disturb the normal anatomical relations of the hepatic tissues, and subsequently pervert or eventually destroy the functions of the liver unless the causal factors are removed.

This pathological process is called chronic inflammation, ultimately leading to cirrhosis of the liver, which is characterized by various phenomena of the gastro-intestinal, biliary circulatory and cerebral organs.

For a working hypothesis, I shall subdivide cirrhoses into three (3) principal varieties after the classification of Nothnagle (Neutnogle) and others of international repute. This classification has reference to the pathology of the three (3) varieties, and is as follows, viz.: (1) Atrophic, (2) hypertrophic, and (3) biliary, the frequency of the occurrence being as above named. The varieties are differentiated *microscopically* by the beginning point of the morbid process, and *macroscopically* by the size of the liver and certain pathological phenomanæ.

PHYSIOLOGY OF THE LIVER.

In order to more intelligently present the subject of cirrhosis it is necessary to briefly review a part of the physiology of the liver.

(1) The liver acts as a natural filter or purifier for the blood from the portal system, its cells abstracting any foreign

toxic or effete matter from the blood and eliminating said morbid products from the system through the various biliary channels into the gut, and are thus normally eliminated from the system.

(2) The liver is a secretory as well as an excretory organ, elaborating the antiseptic bile out of the materials supplied by the portal blood. Therefore, it might be called an organ of various functional activities, the chief of which is possibly to furnish the fluid bile, which conveys into the gut the toxic materials collected by the portal system from the septic gastro-intestinal tract. If the normal arrangement is kept in operation, any reasonable amount of toxic or effete material is eliminated from the blood, and the integrity of the gastro-intestinal tract, the liver and other organs is retained. In case there is a gastro-intestinal disturbance and consequent derangement of hepatic cells, and lowered power to perform their functions, then there will be a preponderance of toxines, ptomaines, etc., in the portal circulation or system. This is true especially in middle or advanced life, when the vitality of all tissue cells is lowered. With the above conditions the liver fails to properly functionate, and easily succumbs to the attacks of the various pathological agencies.

(3) Chapman says: "The bile still retains, to some extent, its aseptic properties in the alimentary tract, preventing fermentation, the formation of gases, etc., and that it is a good lubricant, acting, possibly, as a natural laxative, and that it emulsifies the ingested alimentary fats, rendering them assimilable." For example, in many of the acute infectious diseases, the micro-organisms and their products are eliminated by the liver, through the alimentary tract. But any condition bringing about a gastro-intestinal indigestion and perversion of function of the liver cells will retard elimination of the various toxic or effete materials.

Chronic alcoholism and many other chronic diseases, as pulmonary tuberculosis or cancer in various parts of the body, we are told by our most competent American and European

authors, are among the important factors in the production of the gastro-intestinal perversions which are conducive to the various stages of chronic hepatic inflammation and subsequently the development of cirrhosis of the liver.

Accepting the conclusions of the above authors, combined with my own studies and observations, for a working hypothesis, I feel safe in making the assertion that any habit or practice producing a morbid condition, existing a sufficient time to bring about a state of the gastro-intestinal tract sufficient to pervert or destroy its functional activity, will form a favorable condition, and consequently a medium for the lodgment, retention, development and propagation of the various micro-organisms whose products, to my mind, are the factors which directly produce a hepatic cirrhosis.

Alcohol in its various forms is *pre-eminently* the most common predisposing factor in the production of the above cirrhoses. It is not at all probable that this cirrhotic state of the liver is produced by the direct or chemical action of the alcohol on that organ. We adhere to the more plausible hypothesis that the alcohol first produces a gastro-intestinal irritation, impaired indigestion and assimilation, and subsequently a disturbed anatomical relation and perversion of said organs, *i. e.*, indigestion and the formation of a favorable medium of the undigested food for germ propagation, ultimately resulting in inflammation and the destruction of liver cells and the formation of fibrous tissue which replaces the destroyed liver cells, hence cirrhosis of the liver as a result of the absorption of certain toxic elements, by the portal vacular system from the septic alimentary tract, which is due to the previously explained faulty metabolism. Naturally, when so disturbed, the liver can not exercise its normal functional power over the preponderance of the toxic matters absorbed by the portal system from the pathological alimentary canal, and that the cells of the mucous membrane are so lowered as to more easily admit into the circulation a portion of the poisonous matters that should be eliminated through the in-

testinal tract. Ordinarily the liver arrests, renders inert or eliminates such poisons from the system, but when involved as above, eventually succumbs to cirrhosis. In looking up the literature on this subject, we find that Boix (Buie or Boye) of France has also come to the conclusion that hepatic cirrhosis is due to the absorption from the deranged alimentary tract, toxic matters, or more especially the products of fermentation. In his experiments upon animals, he treated a large number with lactic, acetic, butyric and valerianic acids, and obtained cirrhosis of the liver. He then combined alcohol with these various acids, and again produced a more typical atrophic cirrhosis. Boix having demonstrated on animals that the absorption of the by-products of intestinal indigestion toxines, etc., is the direct cause of hepatic cirrhosis, and having associated with cirrhosis, in man, an early history of gastro-intestinal indigestion and its consequences, one could logically conclude that anything producing a chronic gastro-intestinal indigestion, would be a factor in the production of cirrhoses of the liver.

THE OPIUM FACTOR IN THE PRODUCTION OF HEPATIC CIRRHOSIS.

Although alcohol is one of the most common predisposing factors in the production of indigestion and its sequelæ, hepatic cirrhoses, opium, in our experience, is also a very prominent etiological factor in cirrhosis of the liver, and a hypothesis which I have never seen advocated. But considering it from a toxic standpoint, it appeals to my mind as a reasonable and logical phase worthy of study. I have in my practice encountered several cases of cirrhosis, especially the atrophic variety, in which I could attribute no other cause of the pathological state than chronic opiumism. I have at present a case—a lady 50 years old—whose history is absolutely devoid of alcohol as well as the other etiological factors, but has been addicted to the use of morphine about ten or twelve years. She now presents all the typical symp-

toms characteristic of cirrhosis of the liver. It is useless for me to rehearse the conditions brought about by the habitual ingestion of opium, and more especially its detrimental action upon the digestive process. According to Chapman, opium destroys the phagocytic action of the leucocytes, thus increasing the eliminative work of the liver and kidneys. This, coupled with the increase of the absorption of the by-products from the deranged intestinal tract due to the action of the drug on the digestive secretions, produces the chronic inflammation which eventually leads to cirrhosis.

Gastrostomy.

BY JOHN R. IRWIN, M.D., CHARLOTTE, N. C.

By this term is meant the establishment of a permanent opening into the stomach for the purpose of dilatation, treatment of benign strictures, but more especially for the administration of food.

It was first proposed by Egeberg, a Norwegian surgeon, in 1837, in cases of stricture of the œsophagus, which were beyond local treatment, and he described the details of the operation with great minuteness. Sedillot, of Strasburg, appears to have been the first to perform this operation (or as he termed it, gastro-stomic) in 1849. About one year subsequently Mr. Cooper Foster did the operation in a second case, at the suggestion of Dr. Habershon, an eminent physician and author of a work on Diseases of the Alimentary Canal. This case was a child four years and four months old, admitted into Guys Hospital. Seventeen weeks previously he had swallowed some corrosive poison, which resulted in stricture of the œsophagus. This was the first operation of the kind in England. After this the operation was attempted by Gunther, Gross, Curling, Bryant, and others, but in each case so far death ensued.

The first satisfactory result was obtained in 1874 by Mr. Sydney Jones. The operation has since this date advanced, and the establishment of the procedure as a justifiable surgical measure is largely due to Mr. House, who first advocated the performance of the operation in two stages, though this practice had been previously advised by both Egeberg and Nelaton.

Before this it was regarded as an opprobrium of surgery, that hopeless starvation should be accepted as the inevitable issue of simple constriction of the gullet. Gastrostomy, today, is in itself so free from danger, thanks to asepsis, antisepsis and improved technique, that it is indicated in every

case as soon as the diagnosis of a non-dilatable stricture of the œsophagus is made. It has been abundantly proved by operations that the stomach may be opened with comparative impunity.

The difficulty of this operation consists in so making the fistula that fluids shall pass through it into the stomach while none passes in the opposite direction. The escape of gastric contents through a fistula is disagreeable for a patient. It produces eczema or ulceration of the skin, which is extremely painful and deprives the patient of much needed nourishment, and thus defeats the object for which it is done. All modern methods depend for effectiveness upon mechanical or an anatomical valve action somewhere in the sinus; and since Witzel has shown that a fistula can be so placed through the stomach wall that the escape of gastric contents is not permitted, gastrostomy has become a most valuable procedure.

Indications.—Œsophageal diverticula, neoplasms, and extensive inflammation from the ingestion of corrosive substances, where it is intended to keep the organ at rest during the process of repair. Actual strictures of the œsophagus, those caused by carcinoma being the most frequent, and next in frequency those due to contact of caustics, where stenosis of the œsophagus or cardiac orifice of the stomach has advanced to such an extent that the introduction of food per viam naturalem or by the use of tubes is no longer possible. The tortures which patients suffer from their disease, the pangs of hunger and thirst, the slow starvation which is their lot, are indeed so frightful that an attempt should be made to relieve them, even if it is only to be transient. It is to be regretted that as yet the operation is performed too late in many cases. The patients are slow to consent to a procedure about which, even though very unjustly, there still hangs a nimbus of its being a wonderful operation. They only submit from extreme necessity, and thus the best time, that of a relatively good general condition, passes by. It is true that

recently there has been decided progress in this direction, and consequently the results of the operation have progressively become more favorable.

Technique.—The patient should receive the proper preparation as for any laparotomy. The operation itself, which is performed with the strictest observance of antiseptic precautions, consists of three parts: 1. Opening of the peritoneal cavity. 2. Finding and opening the stomach. 3. Fixation of the stomach in the abdominal wound. The incision may be made from the ensiform process downward in the linea alba, or just below the ensiform process parallel to the free border of the ribs on the left side, about three-quarters of an inch distant from it. This is Fenger's incision. More recently Hahn has devised a new incision for the purpose of making the opening in the stomach nearer the cardiac orifice, so as to prevent the escape of the food. He exposes the stomach first by Fenger's incision, then an incision is made in the eighth intercostal space on the left side, the stomach is drawn up forward into the wound and sutured to the skin. Another method has been proposed by Witzel, and extensively adopted by surgeons. The incision is made through the skin parallel to the free border of the ribs, a longitudinal incision through the middle of the rectus muscle, then transversely through the transversalis, whereby the action of a cross-clamp, as it were, is secured upon the India-rubber tube that is to be inserted into the stomach. The stomach is drawn up into the wound, two longitudinal folds are formed in its walls, and a canal made by suturing these folds over the India-rubber tube introduced into the stomach. The viscus is then secured in the wound by a circular row of sutures.

Case.—W. L. P., age 43, was kindly referred to me by Dr. A. M. Whisnant, of Charlotte, for examination and advice. Patient was then suffering from stenosis of the œsophagus as a result of carcinoma, which began some months previously on one of the vocal chords and finally affected the entire

larynx, and infiltrated the surrounding tissues, involving the œsophagus to such an extent that deglutition had become impossible. He had had an operation performed on the trachea in New York some months before, and a second tracheotomy by Dr. Whisnant a few weeks previous to consulting me; and had been wearing a tracheotomy tube since his first operation, which enabled him to breathe comfortably. He could only speak in an audible whisper. The occlusion of the œsophagus being now complete, hunger and thirst intolerable, the patient emaciated from actual starvation and the symptoms very urgent, I advised gastrostomy to give temporary relief and to prolong life, and the patient consented to the operation.

The abdomen was aseptisized and the other necessary preparations made, and the operation performed November 26, 1904. Chloroform was used and the patient anæsthetized through his tracheotomy tube and took the anæsthetic nicely. Had thought of giving it per rectum according to Dr. John A. Wyeth, of New York, but thought best not to get up any irritation there, as I expected to use nutrient enemata after the operation. I wish you to notice that the incision was made in the median line in the epigastrium, commencing just below the ensiform cartilage extending downward toward the umbilicus about three inches. After division of the skin, separation of the fasciæ and muscles, and careful checking of hemorrhage, the peritoneum was opened, and caught on either side with shepherd-crook tenacula, opposite the middle of the incision, and held in one hand by an assistant. Another incision parallel to and opposite the upper half of the first incision was made, the skin undermined so as to connect the two incisions. The index and middle fingers of the left hand were introduced through the peritoneal opening to locate the stomach. Sometimes trouble is experienced in distinguishing between the stomach and transverse colon. But the colon is usually recognized by its muscular bands and the stomach by the sweep of its lower curvature and the

vessels which enter there. The stomach, anterior wall, was pulled forward like a cone, the base of the cone firmly sutured in the first incision by deep fixation stitches, and the apex of the cone of the stomach was passed under the bridge of skin, drawn out of the second incision and fastened with sutures. The abdominal incision was closed and the apex of the cone of the stomach was opened and stitched around in a circular way to the skin. In doing this it is essential that the sutures hold absolutely tight, in order to prevent infection of the peritoneum and to prevent accumulation of secretions and the formation of superficial abscess. A number 18 catheter was introduced through the fistula into the stomach, and clamped with the forceps and the dressings applied.

In this operation, the obliquity of the canal and the pressure of the strip of skin prevented leakage.

Food.—After the operation all precautions were taken to prevent the occurrence of vomiting, nourishment being given by the rectum. There was ordered two ounces of malted milk with enough warm water to make a four-ounce mixture, per rectum, every four or five hours. In my experience, this is an admirable food administered in this manner after abdominal operations, where the patient is too weak to stand the twenty-four or thirty-six hours of fast after taking an anæsthetic. Owing to the extreme weakness of this patient, I began giving him food by the stomach forty-eight hours after the operation. It was given in small quantities and of such a nature as to be readily absorbed. Peptonized milk, raw eggs, alternately with starchy and fatty foods. Half a pint of milk or liquid food given slowly every four hours is a fair average as to quantity and frequency. After feeding by the stomach for some time, the quantity and interval was somewhat increased, as too frequent feeding might irritate the stomach and fistula. Might say here that the tube was removed from the stomach, as there was some leakage alongside of the tube, after a few days. This soon stopped and gave little trouble. The patient soon learned to feed him-

self according to his needs, using a stomach tube and funnel. The gastric feeding soon relieved the patient of his thirst and hunger, and he gained several pounds in weight. It is said that the gain will always be less than when taken by the mouth, because the same food, even, will not have the same nutritive value. This difference is not due to lack of saliva, whose digestive power is slight, but to the fact that the psychical stimulation known as appetite has a powerful effect upon secretion of the gastric juices. A patient with a gastric fistula may be said to be hungry, but perhaps he can not be said to have an appetite. He loses his enjoyment of food and sometimes his liking for the taste and smell of food. This patient, however, later on, masticated his food and thus submitted it to the action of the saliva, which has some digestive power, though slight, then forced it into the stomach through the tube. He lived comfortably about six weeks and died a short while after this owing to the rapid course of the cancerous intoxication and not to starvation. He was delighted with the results of his gastrostomy.

Some interesting points in connection with this case. The complete adhesion of the stomach to the skin and tissues in the incision in 48 hours, taking the anæsthetice through the tracheotomy tube with so much ease, and without even provoking a cough. The thoroughly artificial life he led, after the operation, breathing through a tube, and being fed through a tube, and to me especially, the perfect results obtained.

The Technique and Results of One Hundred Consecutive Laparotomies.

BY J. F. HIGHSMITH, M.D., FAYETTEVILLE, N. C.

When asked for a paper under this section by your chairman, Dr. Monroe, a few weeks ago, it occurred to me that it might be of some interest to the section to report a series of Laparotomies which have come under my care, with special reference to the technique and result of the same.

I cannot go into details of each individual case, but will treat them collectively. Many of the cases in themselves, are very interesting, giving sufficient material for prolonged discussion.

With many of you, especially the older ones, who have had experience with Laparotomy work, this report will be very simple, but to the less experienced ones, who have been plodding their way, taking cases as they come, endeavoring by abdominal section to reach the seat of the disease, and with one object in view, namely, save his patient, restore him or her to health, I hope you can bear with me in this simple effort, treated in a practical way.

My limited experience teaches me that it is a minor point in technique in the vast majority of Laparotomies, which brings success and makes us rejoice with our patient in the result which follows.

With many operators, with their eyes fixed on the removal of a large tumor, or in the attempt to do the work too quickly, minor points in technique are overlooked, infection follows, and our efforts in the case are a failure.

Before operating, I have tried in each case, to make a thorough examination of the patient's general condition; the heart, lungs, liver, kidneys, etc., are carefully looked after, the urine always being examined quantitatively and qualitatively. Having, by a careful study of the case, arrived

at a conclusion to make preparations for operation, where in my judgment, an operation is necessary.

Many cases coming to the hospital for operation, are very nervous, having suffered for a long time, and are anxious to have it all over, and do not want to wait the proper time before operating. No case, should in my judgment, be operated upon under three days, and better, a week, after coming into the hospital. Of course this does not apply to emergency cases, but to the cases which can wait, and become acquainted with their surroundings, with their nurses and physician in charge, and vice versa.

During this period the digestion is gotten into the best possible condition, such foods as have a tendency to the formation of gases I prohibit, giving foods highly nutritious, yet easily assimilated; the secretive and excretive organs are carefully looked after, for when these organs are acting properly, we are apt to have good results, for it is through them that the poisons are eliminated, and the shock to the system from the operation, is overcome.

I do not believe in keeping the patient in suspense by meddlesome treatment and foolish delay, no more than to rush into an operation without the proper preparation; we must be thorough in our preparation.

Granting that we have several days at our disposal, patient should have bowels moved daily, daily baths and mental diversion. For three days preceding the operation, patients are allowed the most easily digested food, and on the third day preceding the operation, I give my patient broken doses of calomel for eight or ten hours, followed by epsom salts. Then, the evening of the day before the operation, two ounces of castor oil administered by mouth. The same evening, the patient should have a thorough tub bath, the field of operation carefully shaved, then scrubbed with green soap, and green soap poultice applied and allowed to remain for six hours, then the soap washed off with sterile water, and a gauze and saturated with 1-4000 solution of bichloride of

mercury applied, and allowed to remain until morning. On the morning of the operation, the patient should have a large soap-sud enema, which should be expelled as effectually as possible. After enema, second preparation is made of the field of operation with sterile water and alcohol, and a bichloride compress of 1-2000 applied. After the patient is on the operating table, pad removed, again scrub with sterile water and sterile tincture of green soap, which is followed by alcohol or ether, and lastly, 1-2000 bichloride solution. The catheter should always be used, or bladder emptied naturally, a short time before the abdomen is opened.

The operator's hands, as well as those who assist him, are thoroughly scrubbed with sterile green soap and water, for ten minutes, then thoroughly scrubbed in 1-4000 solution of bichloride for ten minutes, then rinsed in a hot sterile normal salt solution, and from time to time during the operation, rinsing the hands off in bichloride solution 1-4000, and then in the sterile normal salt solution.

I believe that the bichloride solution is the best and safest sterilizer for the hands, for it hardens the epidermis and prevents perspiration, and thereby prevents bacteria being brought out through sweat and oil glands in the skin. The rubber gloves I have never used, for I cannot believe that I can have the same cultivated touch with them, to enable me in arriving at the diseased condition of the tissues, and without the sense of touch, I would be at sea, my eyes being on the tip of my fingers, as it were. I know many good surgeons employ gloves in their abdominal work, but for my part, I have used no gloves, and seldom have I had infection.

Of course surgeon and assistants are now attired in sterile gowns.

The anaesthetic has been chiefly ether, (Mallincrodt's). I believe ether to be, all round, the safest anaesthetic for major operations. I have had no bad results to follow its use, nor have I had with chloroform.

The patient ready for operation, I make with a sharp

knife, an incision through the skin and superficial fat, down to the sheath of the rectus muscle, dividing this carefully over the rectus muscle; then, with the handle of the scapel, or my finger, open up the folds of the muscle without tearing it, down to the peritoneum, now control all bleeding vessels; this done, the peritoneum is held up with peritoneum forceps, on the one side by myself, and the opposite side by my assistant; then I make an opening into the peritoneum, small at first, only large enough to introduce my finger for examination. At this point, I become extremely careful with my technique in antisepsis, rinsing my hands with bichloride solution of 1-4000, passing them through a hot normal solution, then introducing my finger, and by touch, quickly arrive at a true condition of the organs; this done, the opening is made as large as necessary for the case in point. I would not lay down any iron clad rules as to the size of the opening made in the abdominal wall. I make it large enough to serve the purpose, but am careful not to make too large an incision until I find a necessity for it, for the larger the incision, the greater the shock, and the more liable we are to have complications follow. On the other hand, it is better to make your incision large, than to try, through a small incision, to remove a growth and run the risk of bruising the parts. Each case, however, is a law unto itself.

I do not use the regular retractors any more than I can help, preferring to use the hands for this purpose, where I have good help, as we are not so liable to bruise the tissues. I do not irrigate the cavity unless it be a pus case or there is questionable sepsis. I first irrigate with equal parts of peroxide of hydrogen and sterile water, then use 1-8000 bichloride, afterwards, thoroughly washing out with a sterile normal salt solution. If the case be a prolonged operation, or for any cause the patient exhausted and weak, I use the normal salt solution freely in the abdominal cavity, washing out the cavity until the solution is perfectly clear, and then allowing sufficient to remain to help in adjusting the omentum and bowels.

But, if these conditions do not exist, I close the abdominal cavity without irrigation, only mopping out the excess of blood with a sterile sponge or tampon. When drainage is necessary, I drain at the most natural point to give free exit to pus, many times have drained through Douglass' cul de sac, or, in the case of a hysterectomy, through the cervix into the vagina, but drainage I never use unless compulsory.

I use as drainage the iodoform or the plain sterilized gauze wick. I allow this drainage to remain in for three days, or longer, without being disturbed, if the temperature does not indicate its removal, and many times even for a longer period.

When ready to close the abdominal incision, I bring the peritoneum together with a continuous catgut, plain No. 2, then the recti muscles and the fascia with an interrupted chromicized catgut. This step I believe one of the most important in closing the abdominal incision, that is, adjusting the fascia and bringing it together with the muscles securely, and thus preventing hernia. The skin and superficial fat I bring together with interrupted silk, or silk-worm gut, and recently with plain catgut, being careful to approximate the edges, also watching that there is no excessive bleeding as a result of introducing the skin sutures. While I do not waste time in closing this incision, I try to leave it as dry as possible, with the parts well approximated, for if there be a little blood clot left behind, or excessive moisture, we will not have primary union.

In the introduction of the sutures, we are more liable to have them too tight than too loose; just tight enough to hold the parts together without tension. Many stitch-hole abscesses are caused by too much tension.

The wound closed, parts well approximating, no oozing, as little moisture as possible, I place on dry sterile gauze, using no powder of any kind; then a heavy sterile cotton pad, holding this in position by adhesive strips, then applying a scultetus bandage. When through, no drainage used, everything

goes well, I do not look at the wound again under ten days, when I remove dressing, examine sutures, and remove them.

This naturally brings us to the after-treatment of these cases, and let me say that almost as important as the operation itself is the after-treatment. We must let alone good conditions and look after the bad ones. Do not meddle. After nausea ceases, water in small quantities is given every hour for about six hours, then peptonoids or similar preparations for 24 hours; the patient is kept on liquid diet, consisting of broths, egg albumen and malted milk, but no sweet milk is allowed. If temperature remains normal, soft eggs, toast, custards, and similar foods are given, and gradually followed by semi-solids. The bladder is carefully watched, being catheterized if necessary, every six hours. The bowels are opened as a general thing on the third day, but in case of sepsis or adhesion, are opened as soon as patient can retain medicine given. I usually give small dose of calomel, followed by epsom salts or soap-sud and enema keeping the bowels opened daily.

I do not use morphine to relieve pain if possible to do without it, and if something must be had for that purpose in the first few hours, I first resort to codine hypodermically.

When the case is clean and no adhesions, I do not usually disturb the bowels under 48 hours, when they are moved.

The patient is kept in bed from three to four weeks. After the third week, the patient is allowed to sit propped in bed for one-half to one hour, as strength indicates. This is increased one hour daily for several days, and then allowed to get into a wheel chair. Before allowed to walk, an abdominal support as a safeguard to hernia, is applied.

The one hundred cases I report are made up as follows, and with the following results:

Twenty hysterectomies, with two deaths.

One from the removal of the uterus for carcinoma, patient dying twelve hours after the operation, never entirely rally-

ing from shock; the second dying on the fourth day after the removal of the uterus, for a thirteen-pound fibroid.

In this case, bowels and kidneys acting well, patient reacted, but the heart ran away. I believe it was the reaction of the heart, brought about by the removal of the tumor, acting on the principle of the pendulum of a clock after the weight had been removed.

These two cases were greatly emaciated when they entered the hospital. The other eighteen cases made uninterrupted recovery, and thus far have heard of no bad results following, except in one case, for the removal of a multiple fibroid, reports a small hernia.

Forty ovariotomies, with two deaths.

One death, after the removal of a fibroma of the ovary, with numerous adhesions, died twenty-four hours after the operation, being unable to control the capillary oozing. She had every symptom of internal hemorrhage, and the post-mortem examination revealed such the case.

One death, removal of very large ovarian cyst of long standing; patient died four days after the operation, could not get bowels to move, kidneys acted well. Think in this case, if I could have devised some plan to hold the weight of the anteabdominal wall off the bowels, until they could have regained their tone, this patient would have recovered.

The remaining thirty-eight cases all recovered.

Ten salpindectomies. One death.

This was a large pus tube of tubercular character, patient living for three weeks and dying from exhaustion.

Ten ventro-suspensions. All recovered and doing well so far.

Five ventro-fixations. All did well.

Two ectopic gestations. Both recovered.

Two tubercular peritonitis. One died.

I know that the general concensus of opinion is to close the incision after operating for tubercular peritonitis, and I have not had a sufficient practice in this class of cases to form

a well-grounded opinion, but with these two cases, the one I drained recovered, and the one I closed died. I do not believe there can be any iron-clad rule laid down about this, but each case will, to a certain extent, be a law unto itself.

Ten appendectomies, four catarrhal and six suppurative. All recovered.

In the catarrhal cases I have opened up the abdominal wall after McBurney's method, amputated the appendix, then invaginate stump into the cecum by the circular suture.

The suppurative cases I have very cautiously dissected down to the peritoneum at McBurney's point, picked up the peritoneum and clipped it just sufficient to introduce my finger and explore. In every case except one, I have been able to find the appendix and remove it, then thoroughly irrigate the cavity with hydrogen peroxide, ½, followed by 1-4000 bi-chloride solution, then pack lightly with sterile gauze. These cases have to be carefully watched and the bowels moved well daily.

One gunshot wound of the abdomen. Recovered.

This sketch has been very brief, and necessarily so with me, but I hope it may not be out of place, and may elicit thought and discussion which may be of interest to others and helpful to me.

Appendicitis.

BY LEGRAND GUERRY, M.D., COLUMBIA, S. C.

Appendicitis has been chosen as the subject of this paper because of all the acute abdominal lesions known to the medical profession to-day, this is the most important. It is a fact that at the Massachusetts General Hospital in Boston during the year 1901 there were one thousand and two abdominal operations, and out of this number three hundred and thirty-seven were on the appendix alone. This condition is not confined to the Massachusetts General Hospital, gentlemen, but exists practically every place where surgery is done. This statement is made at the outset to impress you with the overshadowing importance of this disease, and with the imperative necessity of understanding its pathology and clinical history thoroughly enough to be early and accurate in diagnosis. It is about fifteen years since Fitz of Boston gave to the medical profession his classical treatise on appendicitis. It would not be wide of the mark very much to say that the birth of this disease was in Fitz' paper. Fitz taught us its pathology, he taught us what the disease really was, and its scientific and rational treatment followed not only logically but of necessity. In spite of all the brilliant work that has been done and of all that has been written about this disease, the last word has not yet been said. There are still questions concerning diagnosis, prognosis and treatment that have yet to be settled. We shall first discuss the important clinical symptoms as bearing directly upon the question of diagnosis. We quote the following from Maurice Richardson:

"Symptoms are severe if pain continues unabated, with fever, right side rigidity and tenderness, especially if there is vomiting and distention. The constitutional signs are less important than the local at this stage, for in some infections, even if they are general, the pulse and temperature may be but slightly affected. Indeed, constitutional symptoms

greatly outweighing the local should excite the most careful consideration when appendicitis is suspected, for the former may be merely the expression of an acute absorption from the gastro-intestinal tract, the local signs being perhaps only a painful colic, affecting the right rather than the left side of the abdomen. On the other hand, pain that has made its way to the region of the appendix, that remains there, that is accompanied by extreme muscular rigidity and tenderness, even without fever, should excite apprehension and raise the question of intervention. With tumor and with fever these symptoms require operation, unless there is rapid and unmistakable amelioration; they demand it if there is constant vomiting and beginning distention, and even if some of the symptoms show signs of improvement."

PAIN.

According to the above-quoted author, pain is the most urgent, the earliest, most important and most easily misinterpreted sign. In the beginning of an attack pain is usually felt over the entire abdomen, and at this time is especially referred to the umbilical regions. Within the first twenty-four hours it generally localizes itself to the definite area of the appendix, most usually under McBurney's point. If the infection does not become localized, neither does the pain in the great majority of cases at least; in other words, the pain spreads *pari-passu* with the infection. In some cases we note a sudden subsidence of pain, and then an almost equally sudden reappearance; this means renewed infection, and the case should be most closely watched, as we may then have to deal with a condition of beginning general peritonitis.

Given a patient with acute appendicitis, and if after twenty-four hours the pain becomes more intense, operative aid is a necessity.

TENDERNESS.

From onset to termination there is tenderness on pressure over the region of the appendix; we must remember here that

the appendix is not always located in the same position, but commonly we find it under McBurney's point. Remembering the relation of the vermiform appendix to the caput-coli, and remembering also that the same nerves which supply the appendix also supply the cæcum and the illeo-cæcal valve, we can readily understand that sudden pain is caused by the passage of gas over this inflamed area. On the other hand, dull and continuous pain indicates localized peritonitis.

NAUSEA AND VOMITING.

Ochsner's description of this system is so admirable that we quote it entirely:

The localized congestion in the vicinity of the ileo-cæcal valve prevents the natural passage of gas and intestinal contents, from the ileum into the cæcum, and this, in turn, interferes with the physiological process of digestion of the food which has been taken into the stomach. We have consequently the same reason for return peristalsis that is present in any other form of mechanical intestinal obstruction. This condition gives rise, primarily, to a feeling of nausea; and, secondarily, if the condition is not changed, the undigested, decomposing food is forced back into the stomach by the persistent return of peristalsis, and there gives rise to vomiting, precisely as any other similarly nauseating substance would were it taken into the stomach through the mouth."

RIGIDITY.

This symptom is of utmost importance, because by it we can early make a differential diagnosis between acute salpingitis, gastritis, biliary colic, etc. Rigidity is a symptom of onset rather than of fully established appendicitis, for as the disease becomes fully shut off the tension diminishes and so does the rigidity. It means but one thing, involuntary protection of the underlying structures. "Rigidity with distinctly localized pain strongly suggests appendicitis, with fever it almost proves it, and with tumor it fully establishes

the diagnosis." This symptom alone will very surely be the index to the extent of the peritoneal invasion.

TEMPERATURE.

There is no more capricious symptom in appendicitis than this one of temperature; it may have a very grave significance or it may not, but things being equal, temperature is a very important symptom. All of us have seen very slight lesions of the appendix with very high temperature, and on the other hand, very grave lesions with little or no temperature. Ochsner believed that more cases are lost because the physician in charge is not concerned about temperature, than from any other cause. A steady, continuous temperature, or one that rises from 100 degrees F. to 103 degrees F. indicates either a local or a general infection, and according to Richardson, if these symptoms do not demand operation they demand very strong reasons for non-intervention. In the infections due to colon baccillus the temperature is low, in streptococcus the temperature very high.

PULSE.

The pulse is of prognostic rather than of diagnostic value. We believe it to be a great mistake to wait on the pulse to give us the indication for operation. It is very much like waiting on the condition of collapse before deciding to operate on a typhoid perforation; collapse is not a symptom of perforation, but it is rather the result of perforation. When the pulse is regular and in the neighborhood of 100 there is generally no immediate danger, although there may be great danger within a few hours. "When high and of poor quality the pulse shows perhaps more than any other symptom the depth of the constitutional infection."

TUMOR.

When tumor occurs it adds a sign to the clinical aspect of the case that makes positive the diagnosis. Tumor is also of vast importance not only to the necessity of operation, but also for the location and extent of the incision.

TYMPANITES.

In the early hours of the attack tympanites is caused by the failure of gas to get by the inflamed ileo-cæcal valve, in the later stages it is due to the decompositon of food.

LEUCOCYTOSIS.

When properly taken and at the proper time, we believe this to be one of the most, if not the most valuable single signs, as well as one of the most infallible. A leucocytosis of 15,000 or over in the early hours of an acute appendicitis, is most surely an indication for immediate operation; on the other hand, when the white cells are practically normal or only slightly increased, the necessity for operation is not urgent.

In a goodly number of cases we have operated solely on this sign, and have never had reason to regret it. We would impress the fact that the white cell count is of chiefest value in the early hours of the attack; more than any other sign we believe that it will point to the actual condition of the appendix.

The following is contained in a personal letter from one who stands at the head of the surgical profession in this country: "My feeling is this, if I have reason to suspect an appendicitis, no matter how mild the symptoms may be, and yet find a lecocyte count of fifteen thousand or over, I operate at once without fail. If on the other hand I am called to a case where the symptoms of appendicitis may be rather pronounced, and yet with a low leucocyte count, I am never in such a hurry to operate, and rarely under these circumstances find anything more than a catarrhal condition."

So much for the symptoms, gentlemen. I trust that they are sufficiently clear to be thoroughly understood. This paper does not deal with the question of when to operate, because it is our belief that this point has to be decided by the surgical intuition of each individual operator, and can not be determined by any fixed rule. We feel perfectly safe,

however, in laying down this rule, that every case should be operated on as soon as the diagnosis is made, provided such diagnosis can be made within twenty-four hours. The reason for this is obvious; if it were possible to operate on all cases within twenty-four hours in nearly every instance we would operate before the infectious process had gotten beyond the appendix; in other words, we would be able to do clean work in an uncontaminated field. The cases are very few indeed in which the infection spreads beyond the appendix itself within twenty-four hours. So much for the early cases.

As for the later ones, seen on the third, fourth and fifth days of the attack, the clinical as well as the pathological condition is entirely different.

"After the first forty-eight hours the conditions found at operation differ materially from those of the earlier hours. Necrosis has been fully established, localization has become successful, or infection has become general. The appendix will be found imbedded in recent adhesions; contiguous to it, surrounding it, or in some way connected with it will be found a foul-smelling liquid exudate teeming with bacteria. This exudate will vary in its location between wide limits of peritoneum. It may be far to the right, behind the cæcum; it may be high up, involving liver and kidney; it may fill the pelvis or cover the bladder; it may be buried among small intestines; it may be directly under the skin; it may appear even in the left lower quadrant of the abdomen."

It it not fair to question a policy of universal intervention when cases are seen at this most critical stage of the disease? To be perfectly fair, however, one must acknowledge that with increased experience the operative results in even the gravest forms of the disease are surely improving. Richardson puts the question in this way: "The essence of the whole question is to select those cases who without operation will recover, and those who without operation will die." There is one class of cases we feel convinced that the mortal-

ity would be materially reduced by treating them after the method of Ochsner. Patient in approximately this condition, temperature 104 F., pulse 140, abdomen enormously distended, pinched features, delirium, and stercoracious vomiting. These are the cases in which the operation is attended with great mortality.

I can do no better than to quote at this point a passage from Mynter's work on this subject:

"The third group is represented by twenty cases, Nos. 31 to 50 inclusive, all of which had gangrene with perforation and beginning or diffuse peritonitis. Five of these recovered, while fifteen died, one of gangrene of the cecum and one of pyelophlebitis supperative after the peritonitis had disappeared, and thirteen of diffuse peritonitis. Two were operated on within twenty-four hours, three on the second day, three on the third day, five on the fourth day, two on the fifth day, four on the sixth day, and one on the seventh day. The five who recovered were operated on in two cases on the first day, in two cases on the second day, and in one case on the third day. Of the fifteen patients who died, one was operated on during the second day, two on the third day, five on the fourth day, two on the fifth day, four on the sixth day, and one on the seventh day. Comments seem unnecessary. All died if operated on later than the third day."

The whole question of appendiceal surgery would be settled were it possible for us to know one thing, when is an inflamed appendix for the first time going to give rise to serious trouble? This question we do not know and there is no way at present to find out. Could we know this we would always anticipate the danger by the aseptic removal of an aseptic appendix. We will close our paper by the following quotation, because it sums up the situation better and more thoroughly than has ever been done by any one else so far as we know at least, and it does give us in a general way an insight into the question of when to operate and when to advise operation:

"The indications for operation in appendicitis are present whenever the disease is strongly suspected in patients whose general and local conditions justify the operation. Some cases should be operated upon immediately, some require delay for a more favorable opportunity, some permit leisurely selection of a convenient time. The time for operation is the important consideration, chronic cases may be operated upon at any time, for they are all practically aseptic and permit immediate closure of the wound. Acute cases may or may not be operated upon at once, the question too broad to be discussed at this time, it is a great mistake to remove the appendix as soon as the temperature has reached the normal line, for there is littlte to be gained over the operation in the acute stage, the infection is quite as virulent and therefore quite as dangerous, closure of the wound is prolific of disaster and drainage is necessary. Many a death has followed an operation at this time, when the wound has been tightly closed. The patient should be left until a month at least has elapsed after complete convalescence."

Such, gentlemen, is the feeble presentation of one of the most vital questions that engages the attention of the general surgeon. The paper may not have been helpful, for claim is made neither to novelty or originality, but an earnest endeavor has been made to present the subject in the most advanced light. We have certainly reached the goal of an honest endeavor.

Report of a Case of Fracture-Luxation of the Spine—Operation—Results—Present Condition of Patient.

BY J. R. PADDISON, M.D., OAK RIDGE, N. C.

Realizing how rare cases of this nature are, I decided to report the case of one of my patients who is so unfortunate as to be the victim of an accident resulting in a fracture-dislocation of the spine.

In the course of my remarks, I shall endeavor to report the case in a simple manner, and shall avoid going into a detailed discussion of the anatomy and physiology of the spinal cord and of nervous affections resulting from injuries to the spine. There is always a feeling of depression when we are called upon to see any patient whom we know has received a severe injury of the back, for we at once feel the gravity of the case. I think we should, as a rule, go to the bedside of a patient with a blank record, not wondering what is the matter, not making a diagnosis before we see our patient, that is, should not make snap-shot diagnoses, and surely this could not be truer than when we are called upon to see the victim of some spinal injury.

In regard to the case under discussion, I wish to express my sincere appreciation to Dr. J. W. Long and Dr. J. R. Williams, of Greensboro, for aid rendered me in this case, and also for hospital charts, etc., used in obtaining data for this paper.

As all of you know, fracture and dislocation of the spine are comparatively rare, and with one we usually have associated the other, hence the aptly applied term of fracture-dislocation.

On June 22, 1904, I was called to see Mr. B., age 30, single, farmer by occupation. Upon reaching home of patient I found everybody much excited, consequently could not get a very detailed account of the accident. Learned, however, that Mr. B. had been working under a reaper when some

part of the machinery gave way, catching him while occupying a squatting posture. The weight of the machine (about 800 pounds) pressed him downward, and at the same time a wooden beam pressed with great violence upon his spinal column. When machine was raised Mr. B. was unable to pull himself out and said he could not use his legs. He was picked up and carried into house and laid upon a bed. When I went in to see patient, found him suffering agony with his back. On examination, found pulse accelerated, patient very anxious and alarmed, and you could see mental as well as physical suffering written upon his face. By physical examination I discovered a bruised mark running from the spine of left scapula downward and slightly to the right, terminating over the spinal column about the twelfth dorsal vertebra. At this point was quite a prominence, which was very painful upon pressure. Above and below this point there was no tenderness or anything abnormal in appearance. A slight blow upon the head or foot caused pain. There was complete loss of motion and sensation of the lower extremities.

I made the patient as comfortable as possible, requested him to lie upon his back and remain perfectly quiet. I left him for four hours. When I returned, the examination was carried further. I discovered there was no control over the bladder or bowels. I used catheter and relieved bladder of about twenty-five ounces of clear urine. Bowels had moved involuntarily. The patella tenden reflex was gone. It was evident I had marked pressure symptoms upon the spinal cord. What was this pressure due to? I thought of severe concussion from direct violence, compression from hemorrhage, and compression from a fracture-dislocation. Taking all symptoms into account, I decidedly favored a diagnosis of fracture-dislocation about the twelfth dorsal vertebra. But hoping against odds that the symptom might be due to a hemorrhage which might possibly clear up, I put the patient upon a hard, smooth bed, gave iodide of potassium, used cold and hot applications over spine in the form of crushed ice

and hot water, gave an occasional hypodermic of morphia to relieve pain, kept bowels open, which was no easy task, and catheterized patient three or four times a day. Might say here that all attempts to prevent cystitis were unsuccessful.

This course of treatment was kept up about eight days. There being no improvement, I advised calling Dr. Long in consultation.

He came out to Oak Ridge one afternoon and advised an immediate operation. For one cause or another we could not get patient to hospital for a few days. On July 12th, I carried patient to Greensboro Hospital, and on the 13th the operation was performed. Here is the history as recorded in the hospital records:

July 12, 1904. J. C. B., white, residence Oak Ridge, N. C., age 30 years, farmer, family history negative.

Personal history good. Has no direct bearing upon present trouble, other than showing that patient has strong constitution.

Physical examination: Height six feet one inch, weight 160 pounds at time of injury, well nourished, color good, skin elastic and moist over upper extremities and trunk. Elastic and dry and shows lack of warmth over legs and buttocks. No edema of feet and legs. Sensation of smell, hearing and vision good.

Present trouble: Comes to hospital because of paralysis of both legs, caused by a reaper falling on him, fracturing spine and causing pressure on spinal cord. Has no control over sphincter and muscles. Retention of urine, but no dribbling. Loss of sensation in legs, lower portion of rectum, and penis.

Spinal column: Has prominence in region of last dorsal and first lumbar vertebra, with apparent depression about area of second lumbar vertebra. Over this area there is slight tenderness upon pressure, which seems deep seated.

Abdomen: Nothing abnormal upon inspection. Upon palpitation and deep pressure the abdomen has a doughy feel and does not promptly resume its normal tone.

Muscular state is fair, but shows atrophy to have taken place in the legs, and they do not seem well nourished as do the muscles of the upper extremities and trunk. Not able to say whether this atrophy is due to degeneration of cord.

Motor function: Paralysis of all muscles of both legs, except biceps muscles of left leg, which seems to be tense and either active or else in a state of a spastic paralysis. Paralysis of the lower rectum. Loss of patella tendon reflex. Scrotal muscles seem to retain contractile power from slight stimulation externally.

Sensation of pain: Absent in left leg anteriority, to a point about three inches above patella, from which point get disturbed sensation of pain to a point corresponding to level of great trochanter and symphysis, normal above this point. Sensation of pain completely lost in front, on outer and inner parts of right leg up to a point two and one-half inches below anterior sup. spinous process of ilium. From here to a line corresponding to a line drawn from upper part of pubes to a point about two inches above ant. sup. spinous process of ilium we get disturbed sensation of pain. Above this, sensation of pain seems normal. Sensation absent in scrotum and penis except at base, where it is disturbed.

On posterior surface of right leg as high as the great trochanter there is a loss of sensation. A space of about two inches above this point there is disturbed sensation of pain, while above this level it seems normal.

On posterior surface of left leg up to a point corresponding to a line drawn from the tip of the coccyx to a point about two and a half inches below great trochanter, there is a loss of sensation of pain. From a space of two and one-half inches above this line, sensation is disturbed. Above latter area sensation of pain seems normal.

Sensation of touch is lost in left leg up to about six inches above knee. From here upward to a line drawn from top of coccyx to greater trochanter, sensation of touch is disturbed. Above this point seems normal.

Sensation of touch is lost in right leg corresponding to area of loss of sense of pain.

On anterior surface of left leg sensation of touch is absent up to lower border of patella. Above is normal.

Sensation of touch in scrotum is present but disturbed. Absent in penis, except at base, where it is disturbed.

Temperature sense: Absent, disturbed, and present in areas corresponding to sense of touch.

Examination of urine: Appearance cloudy; color, dirty yellow; react., alkaline; sp. gr., 1021; albumen negative; sugar negative.

Microscopical: Amorphous alkaline phosphates, pus cells abundant, some mucus.

Patient was operated on by Dr. J. W. Long on July 13th. Patient was prepared in the usual manner, the anæsthetic being ether. The operation performed was that known as laminectomy. An incision about eight inches long was made over the spinous process in region of injury. Muscular structures and other tissue was dissected back, until the spinous processes were clear of tissue. On examination of the now visible vertebrae, we found the spinous processes of the last dorsal and first lumbar vertebrae fractured and also dislocated backward of the vertebrae. With bone forcepts, the spinous process and adjacent parts of eleventh and twelfth dorsal and first and second lumbar vertebrae were cut away, thus removing the posterior bony wall of the cord. The spinal cord was now inspected carefully, but not finding any clots or other foreign substance in cord itself, the operation was completed by closing incision except in lower part of wound, in which was placed a drainage tube.

Patient reacted nicely and made a splendid recovery, never being in a critically dangerous condition. Within five or six days after the operation the hospital records showed patient to be running about normal temperature and pulse chart. The most annoying complication after operation was the persistent cystitis, and at times there was dribbling of urine. This latter symptom did not persist long, however.

Just five weeks after operation patient was removed from hospital to his home.

What were the results of the operation? This question can not be fully answered yet, for patient seems to be improving in some respects to-day. But can say much immediate good was done. In the first place patient was relieved of very great suffering, and secondly, very soon after the operation we noted a great improvement in the condition of bladder and bowels.

The patient has not been catheterized nor the bladder irrigated since last October.

The present condition of patient: General health is good, is cheerful, and can pull himself about in any shape in bed, can help himself from bed to rolling chair, etc. Appetite good, condition of skin good, the muscular atrophy in the legs is not nearly so marked, and better still, the paralysis of bladder and lower rectum has disappeared, the patient having perfect control of both.

The paralysis of legs still exists, but there is improvement here also as to sensations. In left leg, all sensation is absent in foot, but sensation of touch, pain, and temperature are present but disturbed up to a point about six inches below knee. Above this point all senses seem normal.

In right leg all sensation is lost to about four or five inches above the knee, then there is disturbed sensation up to about Pempart's ligament, and to a corresponding line posteriorly. Above, all sensations seem to be normal.

Within the last two months the patient has been able to control the flexor, abductor and adductor muscles of the thigh to some extent, and is feeling very proud of himself to think he can move his leg.

As to treatment will say just a word. Have not used electricity for no better reason than the lack of proper electrical apparatus. Have given tonics, daily baths, massage for lower limbs, and an abundance of fresh air and sunshine and good hygienic surroundings.

It has been just eleven months since the injury, and even this late I am entertaining a slight hope that patient will yet make greater improvement, if not recovery.

In conclusion, wish to say I think operation was certainly indicated, and to a great measure successful, and have only one regret to offer, viz., that we did not operate within forty-eight hours after the injury.

Ectopic Gestation—Report of Some Surgical Cases.

BY C. M. STRONG, M.D , CHARLOTTE, N. C.

Case 1.—Mrs. W., age 30, married 10 years, no children. Had treated her few times for dysmennorrhia, which usually lasted three days, greatest pain first few days, when she usually remained in bed; health fairly good, very nervous; was called to see her December 8th. She has missed her last menses seven weeks, and commenced flowing on the 7th with severe pain in right ovarian region, temp. 100 per cent, flow free; prescribed sedatives as usual. Saw her again on the 9th, pain more severe, temperature 102 per cent, very tender and rigid over right lower quadrant of abdomen. Suspecting pus, made examination and found mass on right side of uterus, size of lemon, fluctuating and somewhat movable. My diagnosis was a pus ovary or tube. She was exquisitively tender, and I suggested that she should apply ice and be operated on in a few days when the acute symptoms subsided. Her temperature kept up in spite of free catharsis. Also the pain remained until the 10th at 4 p. m., when I was hurriedly called, with the admonition from husband that something had to be done at once. I thought that I would evacuate by post. cul-de-sac operation, but before deciding thought it best to make another digital examination. On doing so I found the same rounded mass, and in attempting to outline more fully it ruptured, it seemed to me with a more audible report than a rifle. I knew something had to be done at once, as I had reason to believe from the temperature that it contained pus and was ruptured into the peritoneal cavity. I hurriedly summoned the ambulance and had her taken to the Presbyterian Hospital, and by 5 had her on table. A posterior cul-de-sac operation was first done to drain the abdomen. On cutting down by blunt dissection, I was rewarded by a deluge of blood, bright red; hurriedly packing the opening I immediately did laparotomy. On getting down I found a rup-

tured tube, the rent being about the size of the little finger, from which was flowing a fairly steady stream of blood. Two Kelly hysterectomy forceps stopped the hemorrhage. I then removed about a pint of clotted blood from the abdominal cavity. A V-shaped part of the tube, with the mass including right ovary, was taken out. The peritoneum stitched up over raw surfaces, ovarian and infundibular arteries tied separately, drain left below in the cul-de-sac and abdomen closed. She made an uninterrupted recovery. It was evidently a tubal pregnancy without any symptoms until the seventh week except absence of menstruation. I can't account for the temperature, as no pus was found; no fœtus was found, but it evidently was in some of the clots. Some shaggy projections in the mass were pronounced chorian villi, but unfortunately no microscopical examination was made. I am sure ectopic gestation occurs more often than we suppose, also that we should be very careful in making our examination in the pelvis.

Case 2.—Colored boy of 14, referred to me from South Carolina by physician, with history of repeated attacks of appendicitis. Family history negative. Found on presentation Good Samaritan Hospital an emaciated, ashy specimen of humanity. Temperature 100 degrees, pulse 102, vomiting, as he expressed it, for past three days of what should pass the other way, although he didn't vomit any fecal matter after coming to hospital. Entire bowels were swollen and tender, with dullness on percussion, accentuated on right side above McBurney's point. The muscles were rigid and facies abdominalis marked. The supposed diagnosis was appendicitis with perforation and general peritonitis.

Operation revealed, on opening the abdomen, a straw-colored fluid, no adhesions around the appendix; in fact, no appendix, nor had there ever been one. We, however, found enlarged glands or masses the size of peas and larger on the visceral layer of the peritoneum, also in the mesentery between the folds of mesentery; the opening was enlarged and

no abnormal condition noted except these, which were more numerous around the right illiac fossæ. The diagnosis was tubercular diseases of the bowels. Yet I doubt it. I have frequently found on opening the abdomen, these enlarged glands, and I believe that they are not always tubercular, rather that they often enlarge from chronic ptomaine absorption from improper diet. I believe this case was one of this nature, and furthermore, that many cases of so-called cures of tubercular peritonitis from simply opening up the abdomen and saline washing, are of this nature. I never could fully get the consent of my mind how this simple operation could cure so fatal a malady. The peritoneum was rubbed with gauze and washed with salines and some left in abdominal cavity. He made a rapid recovery and now, three months after operation, is fat and slick. I think the cure in these cases is due to the diet and rest which necessarily follows operation as well as to the local effects.

The obstruction, in my opinion, was caused by the fluid, which I am satisfied often causes obstruction of the bowels.

Case 3.—Since writing above have had the most interesting case of all. John F., age 46, negative history except one tuberculosis brother. Had trouble with right knee three and a half years, at times confined to bed for few days. Worked on farm most of time; continued pain, no fever sweating.

Found knee one-third larger than L., movement limited two-thirds, not painful on pressure. Peculiar, boggy, grating feeling, no fluctuation scarcely, on pinching up membrane could feel small, soft bodies not movable, bone slightly enlarged.

Skin did not have the shiny appearance and fluctuation of hydrops, nor pain, fever, etc., of pus or tubercular joint trouble.

Having seen two other cases presenting same symptoms—one of these is the honorable Third Vice-President of this Society, Dr. I. W. Faison, of our city, whose case was diagnosed at Johns Hopkins as villous arthrosis—lead me to make

this diagnosis, and as it was advanced case, I opened knee incision parallel to the patella and on introducing finger felt the joint full of these villous growth; then used simon spoon, but the hemorrhage was so fierce I made counter-opening and used hot saline while I curetted. I got most of them, but a great many were so tenacious I had to use forceps and scissors; some were soft, others hard and black; about one-half pint were removed. Crossed draining tubes were inserted and joint was washed out with salt water once daily. He is seven days after operation doing O. K.

The treatment recommended at Johns Hopkins was, in mild cases, tight elastic knee cap, and in more advanced ones the curettage. I can find no literature on subject, and present you few specimens of villi.

Might add that in this case a plaster cast will be used after subsidence of inflammation.

Exomphalos.

BY I. F. HICKS, M D., DUNN, N. C.

Umbilical hernia occurs in three different forms:

(1) The umbilical hernia of infants and young people, due to the weakening of the umbilical cicatrix, which yields before intra-abdominal pressure. This condition rarely persists until adult life, and is readily amenable to treatment.

(3) Umbilical hernia of adults, usually due to a protrusion of omentum or intestine through an opening in the linea alba, either just above or below the umbilicus. This form usually requires operative treatment.

(3) Congenital umbilical hernia, or exomphalos, is an exceedingly rare condition, due to the imperfect closure of the abdominal walls, as a result of which the intestine is not entirely withdrawn into the abdomen at birth, but is found in a cavity at the base of the umbilical cord, which is bulbous and enlarged. If the condition is overlooked, it may be included in the ligature with which the cord is tied, causing fatal strangulation or a fecal fistula at best. If left untreated until the cord is separated, the peritoneal cavity will be laid open and septic peritonitis will ensue. The only treatment is immediate laparotomy, reduction of the intestine and closure of the umbilical opening by sutures.

Exomphalos is subdivided into different forms by some authors, the classification depending upon the degree and amount of intestine protruded.

The case reported in this paper was one among the most fatal, it being strangulated, invaginated and irreducible. The infant in the case here reported was assisted into this world by an old midwife, who had the good judgment, however, to tie the cord above the enlargement. Strange to say, the cord did not separate until the twelfth day, leaving the knuckle of the intestine unprotected. The wise old midwife told the parents the condition was not uncommon, that she often

treated them, and ordered that the tumor be covered with a vaseline cloth until it dried up.

It grew larger every day, but nature had come to the rescue of the infant by adhesions taking place between the outer layer of intestines and edge of umbilical ring, thus closing in the abdominal cavity; invagination continued to take place by means of the inner coil of intestine forcing itself outward until strangulation and adhesions took place between the layers of the invaginated portion. About the fifteenth day two fecal fistulas were found, one at either end of the "T" shaped protrusion. Dr. S. P. J. Lee was called in on the seventeenth day, and requested Dr. O. L. Denning and myself to assist him operate; this we did on the eighteenth day. Upon examination the invagination was found irreducible and strangulated from constriction at the umbilical ring, so the adhesions at this point were broken, a laparotomy performed, about six or eight inches of the ileum resected, and the divided intestine fixed by enterorrhaphy, simple suturing, *i. e.,* the ends were brought together and stitched with Lembert sutures; after this the mesentery was stitched where a V-shaped portion had been removed; the intestines were replaced and the operation completed by stitching the peritoneum and closing the abdominal wall. The bowels were kept locked by opiates for six days, when the infant had a natural evacuation and since then has had an uneventful recovery.

This case is reported on account of its rare occurrence and the almost universal fatal termination.

The success attending this operation, which was done under adverse circumstances, should be an incentive to others not to give up hope as long as life exists in the patient.

The Diagnosis and Treatment of Tuberculosis of the Kidney.

BY RANDOLPH WINSLOW, A.M., M.D., BALTIMORE, MD.

The very courteous invitation to read a paper before this distinguished body reached me at a time when I was much occupied with my professional duties, and consequently unable to devote that thought and care to the preparation of a paper which the occasion demands.

In considering, however, how I might occupy the time at my disposal in a profitable manner, the subject of tuberculosis of the kidney presented itself, and comes with an especial fitness at this time, since a case recently in my care was a native of this State.

I will make this case the subject of my remarks to-day.

J. H. White, aged 23 years, laborer, was admitted to University Hospital, Baltimore, on February 16, 1905, and was discharged improved March 23d. There is nothing of especial interest in his family or previous personal history. His health was good until the present ailment began. He denies having had venereal infection of any kind. Almost one year ago he experienced and increased frequency of micturition, with pain, and subsequently passed bloody urine. These conditions gradually abated, but about Christmas they re-appeared with increased severity, and have continued to the present time. The patient is somewhat emaciated and is cadaverous in appearance. He does not complain of any marked pain or discomfort in the region of either kidney, nor can the kidneys be palpated. He has not had symptoms of renal colic, and his distress is referred to the bladder. On examining the bladder with the sound, some pain was felt by the patient, but no stone or other pathological condition was detected. On admission his hemoglobin was 70 per cent red blood cells 4,000,000 and leucocytes 12,400 to the cubic mm. The examination of the urine showed spgr. 1018, color light, reaction acid, a distinct ring of albumen, no sugar, and

an abundance of pus. His temperature was rather irregular, and ranged from normal to 101 F., and the pulse rate from 80-100. The urine was also examined for tubercle bacilli with negative result. The heart and lungs appeared to be normal, nor was there any evidence of disease of the testicles, epididymes or other external genitalia, whilst the prostate may have been somewhat enlarged.

A cystoscopic examination was made by Dr. Page Edmunds, and revealed an almost normal bladder, with some inflammation and ulceration about the left ureteral orifice. A catheter could only be introduced a short distance into the left ureter, when it met with an obstruction. The right ureter was not catheterized. The diagnosis of tubercular ureteritis and nephritis was made. Lumbar nephrectomy was performed in the usual manner. The kidney was separated from its connections with some difficulty and brought out of the wound. It was enlarged, mottled and lobulated, resembling a fœtal kidney. The ureter was dilated and much thickened, and was divided quite low down. When the kidney was incised a number of caseous foci containing pus were found, and miliary tubercles were also present. The pus cavities corresponded to the calyces of the organ. The patient did reasonably well, passed urine in sufficient quantities, had but little elevation of temperature, and was able to sit up in ten days. He gained flesh and appetite and left for home in a much improved condition, but still suffering from painful micturition.

Tuberculosis of the kidney occurs both as a primary and secondary process. It is said that 15 per cent of cases of renal tuberculosis are primary, while 25 per cent of tuberculous patients have some secondary infection of the kidney. This infection is usually conveyed by the blood current, less frequently by an extension of the disease from some contiguous structure, while in rare cases there may be an extension from the bladder upwards along the ureter. This disease may occur at any age from infancy to senility, but it is most

frequent from 20 to 40 years of age, and is found more frequently in females than in males. Both organs are involved in a considerable proportion of cases. The object of this paper, especially, is to call attention to the fact that in some cases, I might say in most cases of renal tuberculosis, the symptoms are referable to the bladder, rather than the kidney, and these patients, as the one whose protocol I have read, have their bladders washed out for a long period, without any corresponding benefit. It is therefore important that the practitioners of medicine should be on the alert to recognize the true condition as early as possible, in order that effective surgical treatment may be applied. The symptoms of this affection are by no means uniform. In some cases there may be no symptoms at all, until a very late period; in all cases some time must elapse before distinctive symptoms occur. The family history in some cases will show a decided tuberculous predisposition, as in a case operated on by me where the paternal grandfather and grandmother, father and mother and three brothers died of tuberculosis, thus showing an heredity tendency to some manifestation of this disease, and gave a clue to a correct diagnosis. Sometimes the first symptom will be pain in the renal region, acute and lancinating, radiating down the ureter, or reflected to the shoulder or other parts, or dull and aching, and more or less stationary. A tumor mass more or less resembling the kidney may be the first sign noted, or there may be no palpable lump in the loins. As has already been stated, the first and sometimes only symptoms will be referred to the bladder. Dr. George Walker, from whose elaborate article, vol. xii Johns Hopkins Hospital Reports, I have obtained the statistical information herein detailed, says: "So much am I impressed with the great frequency of this symptom, that I hesitate to make a diagnosis of renal tuberculosis where it is absent." Frequent and painful micturition is then a prominent symptom in almost all cases of tuberculosis of the kidney. In some patients the discomfort is of a burning character, rather than painful, as

was the case with a young colored woman upon whom I operated. The urine may be increased in quantity as well as in frequency, and will soon show pathological changes. It becomes cloudy or discolored from the admixture of blood, pus, epithelium and caseous material. The occurrence of pus in an acid urine is strongly suggestive of trouble of the upper urinary passages, and not of the bladder. The pus may be small in amount or may form a large part of the excretion.

Blood in varying quantities is found at times in almost every case, and should be carefully sought for. Albumen is usually present, dependent upon the amount of pus in the urine, tube casts may or may not be found. Tubercle bacilli can usually be found in the sedimented urine, but are sometimes overlooked. Other organisms are also generally present. When possible there should always be a cystoscopic examination of the bladder, and sometimes the ureters may be bougied, but there is always danger that the healthy ureter may be infected in this manner, hence it is best not to catheterize the healthy ureter in most cases.

Constitutional symptoms are generally absent or not marked at first, but usually occur before long. These are especially, more or less, elevation of temperature, with remissions and sweats as in other tuberculous conditions, progressive and often rapid loss of flesh, sometimes vomiting, and when both kidneys are diseased, diminished excretion of urine, and eventually uremia. As the infection is frequently a mixed one, a blood count will often show a marked leucocytosis, and is a valuable adjuvant in making a diagnosis.

This paper deals especially with the discrimination of renal tuberculosis from cystitis, or other disease of the bladder, but there are other pathological conditions of the kidney that more or less simulate tuberculosis. Renal calculus presents many of the same symptoms, but there is an absence of as marked constitutional phenomena. The vesical irritation is not so pronounced, the urine does not contain tubercle

bacilli, unless there is an association of tuberculosis with lithiasis, and a skiagraph will generally show a stone.

Neoplasms do not cause the pronounced symptoms of tuberlosis, there is no pus in the urine, bladder symptoms are not present, and the tumor mass is larger, and grows more rapidly.

Pyonephrosis from infection with pygenic organisms is a more acute process, as a rule, is often due to extension from below and presents a larger and more painful tumor, with rigidity of the overlying muscles and greater tenderness on pressure.

Hydronephrosis is not likely to be mistaken for tuberculosis.

Having determined the nature of the affection, and the side diseased, it is important to ascertain the presence and functional competence of the opposite organ. This is best done by a cystoscopic examination, by means of which the urine may be seen to escape from the orifice of the ureter, and in appropriate cases the ureters may be cathterized and the urine from both ureters collected and examined. The injection of 1 cc. of a 20 per cent aqueous solution of methyleneblue into the subcutaneous tissues is also a valuable test, as this is promptly eliminated by the normal kidneys, but slowly by diseased organs.

Tuberculosis of the kidney is a fatal affection, and no case is known where the patient has recovered from the disease, though in some cases the fatal result is long delayed. Dietetic, climatic and medicinal treatment has no special power to arrest or cure the malady, and surgery alone offers some hope of restoration to health and usefulness.

From the foregoing remarks it will be seen that the treatment of renal tuberculosis is surgical, and when the patient's condition is sufficiently good to withstand a serious operation, and the opposite kidney is healthy, nephrectomy ought to be performed. Even if the opposite kidney shows evidence of disease, nephrectomy may be permissible if the kidney is dis-

organized, and is a focus from which tubercle bacilli are being discharged. The presence of tuberculous disease of the ureter and bladder does not contraindicate a nephrectomy, as it is a matter of observation that the disease of these parts may remain stationary or progress but slowly, when the affected kidney has been removed. As in malignant diseases in general, early operation is indicated. As soon as unilateral tuberculosis of the kidney can be determined, the time for removal of the organ has arrived. In some cases, where the condition of the patient is not favorable, or where there is extensive suppuration, it may be proper to do nephrotomy and perhaps subsequently remove the kidney. Two methods may be employed to reach the kidney, the lumbar or the abdominal. It is always preferable to use the former, when the tumor is not too large, as it is retroperitoneal, gives better drainage and has a lower mortality.

The following cases of undoubted tuberculosis of the kidney have also been under my care rather recently:

Case 2.—Mrs. Z., white, 40 years of age, native of Maryland, was admitted on October 30, 1903, and discharged December 10th, improved. Her family history has already been mentioned, as showing a marked tuberculous tendency. She has had measles, scarlet fever, pneumonia and typhoid fever, without sequelæ. More recently has suffered with quinzy and muscular rheumatism. She is married and has eight living children and two who are dead. The first thing she can remember in regard to the present ailment, is that her urine became dark and offensive; sometime subsequent to this she felt something slip in her right side, followed by much pain, which has continued more or less since. She has lost weight and strength. Present condition: There is a large mass on the right side extending from the ribs to the pelvis, hard, irregular, tender on pressure, but not very painful. Heart and lungs appear healthy. Does not complain especially of her bladder. Hemoglobin 70 per cent, white cells 6,000 to cmm. Urine cloudy, thick sediment, albumen pres-

ent, no sugar, slightly alkaline, and a large quantity of pus, crystals of triple phosphate, mucus and epithelium.

No cystoscopic examination was made. In view of her history, the presence of a tumor mass in the right flank, and the presence of pus in the urine, it was thought that a condition of renal tuberculosis was present, and an operation was decided on. In view of the large mass, an anterior incision through the right semilunar line was made into the peritoneal cavity. The cæcum and ascending colon were firmly adherent to the mass in the side, and there were many enlarged glands in the mesocolon which were adherent to each other. The colon was separated with difficulty, during which enucleation of the mesentery was extensively detached from the bowel. The mass in the side consisted of inflamed tissue, forming a capsule for the tuberculous kidney. This capsule was an inch thick. The kidney and capsule were removed and a tuberculous lesion of the kidney was found at the lower pole, which had penetrated the kidney and caused the extensive infiltration of the surrounding tissues. It was not possible to remove all the glandular masses under the colon without unduly prolonging the operation and increasing the gravity of the situation. Some pus was also found under the colon. The wound was drained, and no untoward complication occurred. I feared greatly gangrene of the colon, from the extensive injury to the mesocolon. She went home on December 10th, and I am informed by her physician that her health has been restored, and that no tumor masses can be left in her abdomen. She weighs 175 pounds and has given birth to a 10-pound baby since she returned home.

Case 3.—P. F., colored female, aged 23 years, admitted to the University Hospital on December 14, 1903, and discharged improved on January 15, 1904. Married, has had two children, who died at an early period, cause of death unknown. Mother died at the age of 41 years of phthisis. The patient says: "I suffer with my bladder and pain in stomach." Three years ago she began to complain of frequent

micturition, with discomfort, referred to the neck of the bladder, which was of a burning character, more than pain. Bloody urine was passed for several months, but subsequently ceased and the urine is now generally cloudy in appearance. At first there was no pain in the loins, but now at times pain is experienced in the kidney region. She has lost weight from 140 to 110 pounds. On admission the temperature was somewhat irregular, varying from normal to 101 F., pulse 90-120. There was a palpable mass in the right loin. The urine was cloudy, no sugar, pus cells in abundance, a few red cells and no casts. No tubercle bacilli were found in the urine or sputum. Both ureters were catheterized by Prof. Hundley; from the right side purulent urine was obtained, from the left side normal secretion. Hemoglobin 36 per cent. Patient's general condition not very good. Lumbar nephrectomy was done in the usual manner, and the patient made a satisfactory recovery. She continues well and has gained flesh and strength.

Urethro-Rectal Fistulae.

BY A. J. CROWELL, M D , CHARLOTTE, N. C.

In presenting this paper we have nothing new to offer you, but wish to bring out an operation for urethro-rectal fistula that promises great things for this rare yet very unpleasant and even dangerous condition. Though rare, it occurs sufficiently often to justify us in giving a detailed description of an operation described by Dr. Tuttle, of New York City, which has proved successful in all his operations for this condition up to the present, prior to which time but few reported cures from all previous operations are on record, that is, for chronic fistulæ.

This condition consists in an abnormal communication between the urethra and the rectum. In the majority of cases this originates in the urethra and burrows backward and downward into the rectum. The urine escapes into the rectum much more frequently than the intestinal contents into the urethra. This is due to the course of the fistulous tract and the urine being more fluid. The downward and backward direction of the tract is not invariable, as we will readily see when we take up the etiology of the trouble. In about 3 1-3 per cent of Dr. Tuttle's cases the course of the tract would indicate rectal origin.

The etiology may be classified as traumatic and pathological. In the traumatic varieties the most frequent causes are false passages made by passing instruments through the urethra or by traumatism produced by such instruments not necessarily having penetrated the urethral wall, but sufficient to destroy the mucous membrane, allowing the extravisation of urine and the formation of abscess, which often rupture into the rectum. Internal urethrotomy or divulsion of stricture in the membranous or prostatic urethra, and operations for stone, enlarged prostate, foreign bodies, and operations on the rectum, are frequent causes of fistulæ. A fistula pro-

duced by the removal of the prostate gland or stone, foreign bodies, etc., from the bladder, usually heal spontaneously, on account of the free drainage we have through the perineums. Those produced by pathological conditions are malignant growths of the prostate or rectum, which may result in a communication between these two organs, but only in the latter stages of the disease. Tubercular, syphilitic, or simple catarrhal ulceration of the rectum may result in urethro-rectal fistula.

Diseases of the prostatic and membranous urethra are the etiological factors in the great majority of urethro-rectal fistulas, in that stricture is the most frequent cause, and they are located usually just anterior to the membranous urethra. The obstruction to the current during micturition forces the urine out into the peri-urethral tissue, after the urethral wall becomes so weakened that it is unable to resist the undue force produced by this undue obstruction, pyogenic bacteria gain entrance into the peri-urethral tissue an abscess is formed, and often ruptures into the rectum. Where an abscess forms in the prostatic urethra, the capsule of the gland will prevent burrowing, and the fistulous tract will usually be very short. The abscess may open into the urethra first, and then burrow into the rectum for want of drainage, but the danger of urethro-rectal fistula from an abscess of the prostate is much less when the abscess opens into the urethra first. This emphasizes the danger of opening abscesses through the rectum, as some authors advocate. In about half the cases in which the abscess opens into the rectum, pus is discharged through the urethra, showing communication between these two organs, and in view of this fact, it is astonishing that we haven't more urethro-rectal fistulæ than we do.

Congenital malformations of this kind are very rare. When urine is passed into the rectum, it is generally expelled immediately, owing to the irritation produced by the urine.

This condition, that is, urethro-rectal fistula, is nearly always accompanied by urethritis and rectitis, and often the

inflammation extends back into the bladder, and sometimes to the kidney, producing pyelitis or pyelonephritis. This is more especially true in a rectro-vesical fistula, however.

As the treatment of urethro-rectal and of recto-vesical fistula is quite different, it is very necessary that we make a careful differentiation between the two conditions.

Urethro-rectal fistula is rarely congenital. The recto-vesical is fairly frequent. In urethro-rectal fistula we have the history of urethral or prostatic disease, and in recto-vesical we have a history of peritonitis or intestinal disease. In urethro-rectal fistula the contents pass only during functional action; in recto-vesical they pass without regard to functional action. In urethro-rectal, the amount passed is usually small and irregular, but in recto-vesical large and constant. In urethro-rectal, the discharge is generally from the urethra to rectum, and in recto-vesical, from the intestine into the bladder. Cystitis is not so frequent in urethro-rectal, but always present in recto-vesical. The opening is small in urethro-rectal, and usually low down, but large and above the finger's reach in recto-vesical. A sound can be felt through the rectum in urethro-rectal, and can not be felt in recto-vesical. Colored fluid injected into the bladder does not appear in the rectum until micturation in urethro-rectal fistula, but does occur in the rectum in recto-vesical immediately after its injection into the bladder. In urethro-rectal fistula the deposit of cicatricial tissues is easily felt through the rectum, and can not be felt in recto-vesical.

Urethro-rectal fistulæ due to operations, generally heal spontaneously, but in those due to pathological processes, there is but little tendency to spontaneous healing, and until recently all operative procedures failed to bring about a cure.

Treatment.—The treatment has been as variable as it has been futile. Writers have recommended methods with which they have had no experience, and but little confidence. Curettage, caustics, and cauterization with catheterization and cleanliness have all proved unsuccessful in chronic cases, but

may effect a cure in the acute ones. Dr. Tuttle has operated on twelve or thirteen cases since he conceived the plan described below, with recovery in every case. I have done the operation only once, with similar results, and with no unpleasant after-effects. The success of the operation depends upon two principles: First, the removal of all obstruction to the passage of urine or intestinal contents through the normal channels; and second, by the obliteration of the fistulous tract. So long as the stricture of the urethra remains, it is impossible to cure the fistula. Wherever there is hypertrophy of the sphincter and muscle, obstruction by tumors, strictures, or similar conditions of the rectum, it is necessary to remove these obstructions before attempting to treat the fistula. Forcible dilitation of the sphincter will relieve the obstruction in either normal or hyperthropied sphincter, but this is only transitory and not to be depended upon in the treatment of so serious a condition. Absolute relaxation for a considerable length of time is necessary to bring about a cure of this condition, and this can be done only by severing the sphincter muscle. It is also necessary to protect the parts from abnormal passage of urine into the rectum, and fæcal matter and gas into the urethra. Permanent catheterization will accomplish the first of these; the latter can only be accomplished by preventing the bowels from acting for four or five days, or by doing an inguinal colostomy. This operation is indispensable when you have considerable rectal ulceration as a complication.

Before operating upon any form of fistula, a thorough investigation should be made as to whether it is tuberculous, as the treatment for tuberculous and non-tuberculous fistulæ are quite different. However, there is a difference of opinion upon this point, and upon which our text-books have but little to say. Dr. Tuttle has sounded a warning against operating upon tuberculous fistulæ, and his book is about the only one that has anything special to say along this line. He claims that nature has thrown out a barrier between the fistulous

tract and the lymphatic circulation in the form of dense fibrous tissue, which prevents the spread of the tubercular bacilli through the lymphatic circulation when unmolested, and when opened up it gives exit to this bacilli through the lymphatic circulation to other parts of the body, where they may do great damage. I am not prepared to express an opinion in regard to this idea. However, I am prepared to say that it is certainly well to know if you have to deal with a tuberculous fistula, as a tuberculous patient's resisting power should be the best that it is possible to obtain, before operating. Furthermore, it is certainly very advisable, whether Dr. Tuttle's theory be true or not, to excise a tuberculous fistula whenever possible.

There have been a number of operations devised for the closure of these fistulæ, as I said in the outset, but none of them save the one I shall describe have proved a success, and I shall not take up your time in describing them. In the operation for this trouble the chief thing to be overcome is to prevent the urine from accumulating in the pocket made by the removal of the cicatricial tissue and undergoing decomposition. Dr. Tuttle in his operation has to a great extent overcome this obstacle, which is briefly as follows: An incision is made from the scrotal juncture of the perineum into the fistulous opening of the urethra, following the fistulous tracts into the rectum, severing both external and internal sphincter muscles if necessary. The cicatricial tissue around the fistulous tract is trimmed away with scissors. (This, of course, being a non-tuberculous fistula.) The intestinal wall is now dissected from its anterior attachments for three-quarters of an inch above the fistula, and one-half of an inch to each side. A flap is dissected from the soft tissue on either side of the urethra sufficiently large to replace the portion of the floor of the urethra that had been destroyed. A steel sound (about No. 30 F.) is then introduced into the bladder and the flap sutured together over it loosely. A second flap should now be taken outside of the first and entirely surrounding it, and

in this way a cushion is formed closing the fistulous opening of the urethra and replacing to a certain extent the tissue removed, thus obliterating the pocket that previously had been one of the great causes of failure in this operation. The edges of the rectal wall are now sutured together through all its coats with chromacised catgut down to the external sphincter muscle (according to Dr. Tuttle, but it seems to me that it would be better to leave out the mucous membrane in suturing the rectum), at which point the mucous membrane is dissected loose for a short distance to each side and drawn together by sutures which do not involve the muscle.

The incision into the urethra below or in front of the fistulous opening is left unsutured in order to allow the exit of any small amount of urine that might accumulate around the catheter in this region, and that drainage might be acquired through capillary attraction by the use of gauze. A number 18 F. rubber catheter is then introduced through the meatus into the bladder and fastened with adhesive straps. A large drainage tube is introduced into the rectum to facilitate the escape of gas and fæces. The perineal wound is sutured up to and covering the flaps over the fistulous opening into the urethra, and the perineal incision is loosely packed with absorbent gauze, which is held in position by a T-bandage.

In this operation we can readily see that its success depends upon the obliteration of the pocket at the site of the fistula, absolute free drainage for the urine through the catheter and perineum, and the section of the sphincter muscle which places the parts at rest and prevents any obstruction to the passage of gas and fœcal matter.

Report of a Case of Round Cell Sarcoma of Tongue, Tonsil and Part of Soft Palate.

BY ST. CLAIR SPRUILL, M.D., BALTIMORE, MD.

The condition from which this man was suffering, round-cell sarcoma of the tongue, is sufficiently rare to justify my bringing this patient before you. Only 36 cases are recorded in literature of sarcoma of tongue, with or without operation; seven of this number were treated with total extirpation of tongue with but one recovery. I wish to indicate briefly some of the most important points in making a diagnosis, and to describe the technique of the operative treatment.

Diagnosis.—The clinical diagnosis of sarcoma of tongue is extremely difficult. It is most frequently mistaken for gummata, less rarely for tuberculosis and actino-mycosis. When ulceration takes place, the clinical picture is very similar to that presented by gummata.

They should be differentiated by the history of onset and evolution of the disease, and the use of anti-syphilitic treatment.

Sarcoma of the tongue usually occurs between the ages of forty and fifty, occasionally prior to these limits. Metastasis is the exception, rather than the rule. The superficial epithelium usually remains intact, unless the tumor grows very rapidly, then it ulcerates, becoming crater-like in shape. The growth is generally soft and not well differentiated from the surrounding tissues. The pain resembles that of carcinoma, radiating to all parts supplied with sensation by the fifth nerve, especially to the ear and temporal regions, being conducted by the lingual nerve, and from it to the other branches of the inferior maxilliary nerve, especially the auriculo-temporal. Possibly pain in the ear may be due to the implication of the fibers of the glosso-pharyngeal nerve, which by tympanic branch is conducted to the tympanic plexus.

Gummata, on the other hand, may occur at any age, and are usually seen at the tip or margin of the tongue. They may be multiple or single, generally painless, ulcerate early if untreated, having a base covered with a tough secretion, which can be removed without causing bleeding, while in sarcoma the ulcerated base bleeds freely upon manipulation.

With the clinical history, anti-syphilitic treatment and microscopical examination of a section of the growth, there should be no doubt as to the proper diagnosis.

Treatment.—The treatment should be thorough and complete, as sarcoma of the tongue presents no feature different from sarcoma in other parts of the body. I can not understand why there should be any difference in the treatment when located in the tongue, from that of sarcoma of the breast or elsewhere. If we operate and fail to remove entire growth, it is sure to return to this location as in any other.

When the growth is located at the base of the tongue, it is best to extirpate the whole tongue, together with submaxillary, sublingual and nearest lymphatic glands, and all affected surrounding tissue.

The procedures for the excision of the tongue are many; it may be removed through the unaltered mouth; through an incision in the neck; through the mouth after splitting the cheek, or temporarily dividing the inferior maxilla; and after excision of the inferior maxilla.

The choice of the operation should be influenced by the extent of the disease. I selected Kocher's operation.

Case.—Mr. McC., age 40, was admitted to the University Hospital on March 25, 1902, complaining of dryness in the mouth, pain, difficulty in swallowing and a tumor on the dorsum of the tongue. He first noticed this growth about two months before consulting his physician, Dr. Monroe. At this time it was very small. On admission to the hospital, I found a crater-like tumor about the size of a walnut at base of tongue, involving the right tonsil and soft palate, somewhat harder than the substance of the tongue, raised well

above its surface, and slightly elevated at the top, and bleeding easily upon palpation.

The right submaxillary, subligual and the chain of glands along with the carotid artery, were found to be enlarged. A small section of the growth was removed for microscopical examination, and was returned from the pathological department with the diagnosis a round-cell sarcoma.

Operation.—April 4, 1902. Patient being anæsthetized with chloroform and field of operation rendered aseptic and incision was made on the right side along the anterior border of the sterno-mastoid muscle, from the mastoid process to about the center of the muscle—thence transversely forward in the crease between the floor of the mouth and the neck, to the hyoid bone—thence along the anterior belly of the digastric muscle to the symphysis menti. The skin and subcutaneous fascia being divided, the flap was turned back by dissection over the cheek. All enlarged glands from the upper end of the sterno-mastoid and from beneath the angle and body of the inferior maxilla were removed en masse. The submaxillary gland was dissected up, working from behind, and removed simultaneously with the cervical glands.

The sublingual gland was similarly removed. The facial artery and vein were tied, as soon as exposed in the process of raising the submaxillary gland.

The lingual artery was tied near its origin, before passing under the hyoglossus muscle. The incision was continued on the left side from the one at symphysis to the border of sterno-mastoid, and the above steps repeated on this side. The mylo-hyoid muscle was now exposed and as far as necessary the mucous membrane cut close to and parallel with the inferior maxilla—and the mouth entered.

The tongue was now seized and drawn through the floor of mouth and wound in the neck. The jaw was held up by an assistant and the tongue removed with curved blount scissors, together with the tonsils and soft palate.

The glands under and posterior to the sterno-mastoid on

each side were removed through a second incision back of this muscle. Kocher always performs a tracheotomy before this operation. In this case it was not done, and only a few drops of blood were lost during the excision of the tongue.

The denuded surface was now swabbed over with chloride of zinc, 40 grains to the ounce, which prevents immediate sepsis by causing the wound to be covered with an inflammatory exudate. The cavity was packed with gauze and the flaps brought into place, leaving a small drain at the bottom of wound. Following the operation, the maximum temperature, 100 2-5 degrees, was on the second day.

Patient was discharged from the hospital April 24, 1902, in good condition, with no evidence of post-operative metastasis.

At the present time, three years and three months since the operation, patient is in good health, works daily, presents no sign of recurrence, and, I think, may reasonably be reported as the second recorded recovery of sarcoma of the tongue treated with total extirpation.

Perineal Drainage in Congenital Defects and Fistulae of the Male Urethra.

BY R L. PAYNE, M D , NORFOLK, VA.

In no class of cases are good results more difficult of obtainment than in congenital defects of the male urethra.

In hypospadias, episporias and urethral fistula, success when attained is usually the result of repeated attempts. The necessary plastic work no more difficult than work of similar character in the other parts of the body constantly fails, and the most frequent cause of failure is the presence of the urine. Many operators tell us in the operation for hypospadias the primary operative procedures are usually accomplished with ease, but when at length the anterior urethra is formed and the critical time has arrived for uniting the new canal with the misplaced meatus, the real difficulty is at hand.

We are advised, after the necessary cutting is done, to make ready the raw surfaces for approximation, that we shall pass a catheter through the newly-formed urethra and the deep uretha into the bladder, and then having sutured the denuded surfaces over the catheter, the catheter must be retained in the bladder for five or six days, so that no urine is allowed to come in contact with the wound. Theoretically this method is admirable, but in practice I have found it defective. The catheter is itself a foreign body, and to greater or less extent the tissues reject its presence. More or less urine will trickle along the sides of the catheter when the bladder contracts, and so infect the wound. The catheter often becomes infected, and so infects the wound, and in some cases the salts of the urine become incrusted about the end of the catheter, and in the effort at withdrawal the tender line of union in the wound is injured. In urethral fistula the same difficulties exist, and in this class of cases the urine is frequently septic. In the operation for epispadias it is impossible to keep a dry wound. In this class of cases, then, I

wish to urge as a primary step in the operation that the urethra be opened in the perineum, a soft, full-sized catheter be introduced through the wound into the bladder and fastened with a stitch, thus constantly draining the bladder and diverting all the urine from the wound in the penis. The operation is one performed with ease and safety, the success of the operation for the defective urethra is well-nigh assured, and after a week has passed the catheter may be withdrawn from the bladder and the wound in the perineum quickly heals. This is a simple expedient, and one which may be in use by others, but so far as I know is not recommended by any other operator. I have had no opportunity to try the method on a case of hyposadias or epispadias since I have thought of adopting it, but the following case of extensive urethral fistula was practically one of hypospadias and serves well to illustrate the value of perineal drainage in this class of cases:

M——, a mulatto male, about 40 years old, was referred to me for operation for extensive fistula urethra. He had long been the subject of very tight stricture in the penile urethra, and some months before I saw him, while making violent straining efforts to micturate, rupture of the urethra occurred, resulting in extravasation of urine and extensive sloughing of the parts. When I saw him I found the floor of the urethra destroyed for one and a quarter inches from the scrotum forward, the urine could not be thrown from the body, and in sexual intercourse the semen did not enter the urethra. To all intents and purposes I had an hypospadias to deal with except there was no incurvation of the organ and the urethra, though entirely out of commission, persisted through the glands. After a few days preparation, the administration of urinary antiseptics, etc., I divided the strictured tissues in the urethra, pared the edges of the fistula, and sutured the parts over a catheter previously tied in the bladder. Suffice it to say in a few days the stitches were found infected and the wound unhealed. After waiting a time to allow the parts

to recover from the first operation, and after even greater care in my efforts to sterilize the urine, the operation was repeated with like results.

I now waited several weeks for all the local effects of the previous efforts at restoration to disappear, and then attempted my third operation. At this time, as a first step, I did a perineal section, introduced through the wound a No. 20 French, soft rubber catheter till the tip lay just within the bladder, and fastened it with a stitch in the perineal wound.

With the urine effectually out of the way, I now proceeded to close the defective urethra. The previous denudations had greatly enlarged the already extensive opening, and so at last I was forced to do the usual operation of Duplay for hypospadias, using, however, a short glass rod to maintain the potency of the urethra at the site of the operation instead of a catheter, as recommended. The result was perfect. In a week the catheter was withdrawn from the bladder. Two weeks later the perineal wound was entirely closed, and all the urine passing with ease through the restored urethra.

Electro-Therapeutics of Epithelioma.

BY W. T. PARROTT, M D , KINSTON, N. C.

In presenting this short paper I shall only deal with epithelioma and its best method of treatment, *i. e.,* the electro-therapeutic method. In arriving at such a conclusion a comparison of the various methods from the almost pre-historic arsenic paste down to the days of aseptic extirpation, has convinced me that the X-rays, combined with the judicious use of the minim light and other accessories, is by far the safest, best and most permanent method. Failures have and will occur, but in most cases they are due to faulty diagnosis and improper use of electricity. A careful study of the neoplasm, both micro and macroscopic, can only enable a man to state accurately that he has cured a genuine cancer with any method. Clinical symptoms are not alone sufficient, and many a medical man has cast opprobria upon the profession's ability to deal with cancer by an improper diagnosis, and permitted the quacks to enjoy the reward in curing exuberant granulations. I am not desirous of the sobriquet "Cancer Doctor," but it behooves medical men to wake up to the fact that this class of cases has been sadly neglected and can be dealt with in a scientific manner. Snap diagnoses and careless treatment has forced many unfortunates to the tender mercies of the quacks and a premature grave. Out of imprecision and ignorance the microscope has lifted us and electro-therapy limited surgical measures. It requires a great deal of time and patience to properly employ electro-therapy, however, and the unfavorable experience of the tyro must not be taken as a criterion of its worth. The average medical school does not give in its curriculum sufficient instruction in electrics to enable its graduates to employ electricity judiciously, and the man who attempts it from a theoretical knowledge is usually disappointed.

Of the two great groups of epithelioma, those of the tubular variety give us the greatest trouble in treating. Those of the flat-cell variety usually more amenable and not so prone to recurrence. In the use of X-rays to this class, auto-infection is at times a very dangerous complication and sequelæ, and demands, like a burn, an abrupt termination of treatment. The patobolic effect of the rays on the sloughing neoplasm throwing into the lymphatic circulation so much septic material as to produce sudden and distressing constitutional symptoms. The patients may seize suddenly with rigor, then fever of a characteristic curve, and with diarrhœa and depression gives us a typical picture of septic fever. As a rule, however, no sudden onset of symptoms develop, but appear more insidiously. Patient's general condition should be noted carefully and temperature as closely taken as in typhoid. I nearly always put cancer patients on nutritient tonics two or three weeks before beginning treatment, especially as they usually come with the emaciated cachexia. My preference is a solution of peptonate iron, arsenic and maganeese, given after meals in milk, combined with eliminants and careful daily cleansing of the neoplasm. A fact very hard to explain, that the constant use of X-rays is prone to produce epithelioma on the worker's hand, if unprotected, and amputation has in a recent notable instance been necessary. Following the first law of nature, the operator should in all instances protect his own hands, especially in prolonged or continuous treatment.

Physiologically, the first noticeable effect of X-rays on the neoplasm is stimulant, followed by intra-cellular disarrangements and degeneration, then absorption, and finally recovery of the tissue to its normal state. It is in this lymphatic absorption that we are most interested when symptoms of intoxication supervene. Five very important, and I might say cardinal, considerations present themselves in the X-ray treatment of epithelioma:

1st. The differential diagnosis of the tumor at hand.

2d. Its location, which, if superficial, a tube with a three-inch spark length should be used, though if lesion deep, a five-inch spark must be employed.

3d. The distance is a very important consideration, and should never be greater than ten inches to begin with, carefully noting effect, and treatment discontinued at first appearance of dermatitis in surrounding tissue. The physio-chemical change in the neoplasm varies directly with the duration of the exposure and inversely with the square of the distance of the tube's center.

The fourth great consideration, then, is the duration of seance. Note carefully any idiosyncrasy existing in the patient, and if no harm results, in two full weeks after first exposure treatment may be begun again, this time every fifth day, gradually bringing the treatment down to daily sittings. It is a good plan to let your patient severely alone upon first appearance of dermatitis, and only begin again when symptoms are entirely gone. In two cases when a rather severe dermatitis was produced, I obtained a most happy effect from the minim light, and as the anæmic action of this agent is very prompt, I consider it valuable in treating an X-ray burn. I was enabled in these cases to restore the skin to its normal condition and begin treatment again much earlier than if the best soothing lotions had been employed.

5th. Tissue surrounding the tumor should in all cases be thoroughly protected. I employ tinfoil on patient, and consider it a better way than to protect tube except at convergence of rays. Both plans might be used conjointly, however.

I have the honor here to report tersely four typical cases of epithelioma treated with the X-rays and the Minim light:

Case I.—Gentleman, age 65. Seen first in June with tumor size of two king marbles on left face. Occupation shoemaker. Family history positive as to epithelioma. Patient himself had cancer in 1887, which was removed surgically. It was situated near present one on left face. He was very much emaciated with characteristic cachexia.

Growth of tubular variety. Much pain, which was only controlled by morphia and local application of cocaine. He was put on tonics and eliminants and general supportive treatment. A week's application of the minim light, given an hour at each seance, reduced the pain so much that his anodynes were almost entirely discontinued. On August 1st he began on the rays, with a high-vacuum tube, ten-inch distance for ten minutes. After two weeks, no dermatitis resulting, he was given the rays every fifth night, the minim light alternating. Gradually (all symptoms of pain, itching, etc., gone) he was given a daily treatment, although no reduction in size of tumor resulted until October 1st, when some reduction in size was noted. Near the middle of the month marked symptoms of auto-infection arose. Slight chill, fever and quick sweats forced us to abandon treatment. Under rest and usual treatment improved, and the rays again cautiously applied. The reduction in size of tumor from now on to January 15, 1905, was very gratifying both to physician and patient, but on this date a severe burn resulted—the patient loosing a small area of his whiskers. The reduction in size of tumor went on under the use of the minim light until February 15th, when we began the rays again, it was almost entirely gone. On March 15th he was discharged cured, and but for the slight area of hair which was destroyed on the face, nothing is left to show that an epithelioma ever existed. His cachexia is gone, and there is a marked improvement in his general condition. At a recent meeting of the Lenoir County Medical Society attention was called to the advantage of the electrical treatment over surgical removal, as in the latter a very unsightly scar had been left when his first tumor was extirpated in 1887.

Case II.—Lady, age 48, occupation nurse. Began treatment November 16, 1904, suffering now lancing pain in large tumor on right nose, which was rapidly growing while waiting for the diagnosis. A true epithelioma was made out, despite the fact that the family history was negative. Very

cautiously the rays were used weekly, alternating with the minim light, until her toleration was determined, and on April 26, 1905, she was discharged, cured.

Case III.—Gentleman, age 46, occupation farmer. Family history cancerous. Some months ago noticed small fissure in middle lower lip, which became ulcerated and painful. Came to me December 25, 1904. Had been previously taking antisyphilitic treatment, though no evidence of syphilis was found by me, and this was excluded. The neoplasm by this time involved nearly half of lip, and he was promptly put under X-rays and minim light. He has made a slow improvement since January 15th, when treatment was temporarily abandoned on account of a slight burn.

Case IV.—Gentleman, age 48, occupation farmer. Family history negative. Admitted November 16, 1904. First noticed tumor on left face one-half year ago, which gradually increased in size to that of an acorn. No microscopical examination was permitted, but the increasing pain and clinical aspects led me to believe it epithelioma. He was given the rays, low tube, 10 inches, 10 minutes, and after two weeks and no surrounding burn resulting, both the minim light and X-ray were used at shorter intervals. On February 8th, he was discharged, entirely cured.

A Report of One Operative Case of Removal of the Gasserian Ganglion, for the Cure of Tri-Facial Neuralgia.

BY BAXTER S. MOORE, M. D., CHARLOTTE, N. C.

Rome Farriss, negro, farm hand, 37 years of age, entered the Good Samaritan Hospital, March 21, 1905.

HISTORY.

Family history: Father and mother lived to good old age without any severe illness.

Previous history: About ten years ago the patient had several malarial chills. With this exception the patient has never had any illness. Three years later, or about seven years ago, the patient had his first attack of neuralgia. The first attack involved the superior maxillary division of the fifth cranial nerve of the right side.

The patient thought that the neuralgia was due to irritation from teeth, which were defective in the upper jaw of the right side; so he had all of the teeth of the right side above extracted.

This first attack lasted about six weeks, and then subsided. Six months later the patient had another attack, which was worse than the first.

The second attack not only affected the superior maxillary division of the fifth nerve, but it also involved the inferior maxillary division at the same time.

The patient then had the teeth of the right inferior maxilla extracted. The extraction of the teeth of course gave no relief, and the attack lasted about seven weeks. In about six months after the second attack the patient had a third attack. This attack was worse than either of the preceding. It involved all three sensory branches of the fifth cranial nerve of the right side.

After the second attack, the following attacks all involved the whole of the fifth cranial nerve of the right side.

The intervals between the attacks became shorter and the duration of each attack longer. When the patient entered the hospital he was suffering with an attack, and had been, which had lasted for seven weeks. His suffering was the most intense I have ever witnessed.

PHYSICAL EXAMINATION.

The patient is about five feet, ten inches in height, weighed about 155 pounds. Muscular development very good.

Heart normal, lungs normal, kidneys normal.

No deformity except the absence of all the teeth from the right side of the superior and inferior maxillar.

The paroxysms of pain came on every four or five minutes and lasted about forty-five seconds. Each paroxysm of pain seemed to be brought on by irritation of the terminal branches of the pharyngeal branch of the fifth cranial nerve. The patient would begin attempts at clearing the throat, and at the same time would place both hands over the right temporal region and commence to rub most vigorously. He would keep this up all during the paroxysm of pain, which would last for about forty-five seconds.

The patient was kept under observation for one week.

OPERATION.

March 28, 1905. Chloroform.

I made an eliptical incision in the skin, starting on a level with the zygoma, and about one-half inch in front of the ear. Carrying the incision up about one-half inch above the squamous portion of the temporal bone, then forward in a curved line, ending near the commencement of the zygomatic process of the molar bone.

I then brought my skip flap down and resected the zygoma. Without cutting the temporal artery and but very few fibers of the temporal muscle.

The hemorrhage in this part of the operation was very profuse, due to the dilated condition of the superficial vessels of this vicinity being greatly dilated from the constant rubbing by the patient during the paroxysms of pain.

With a straight chisel I made an opening through the anterior part of the squamous part of the temporal bone, about one inch in diameter. I then elevated the tempro-sphenoidal lobe of the brain with a flat retractor. At this time the pulse dropped from 90 to 45 per minute.

The hemorrhage at this point was so profuse that I thought it best for the patient to pack the wound and leave it for forty-eight hours. The forty-eight hours during which the wound was packed the patient complained of headache and weakness; at the end of the forty-eight hours I re-opened the wound and removed the gauze. As much hemorrhage was encountered on the second entrance as on the first.

On this entrance I succeeded in removing the ganglion, but not intact. The ganglion is found, as you know, on the depression near the apex of the temporal bone, and covered by a very strong layer or dura. This fold of dura was pulled up with a long dull curette, and the ganglion exposed. I was unable to remove the ganglion by getting the sensory root of the nerve first, and then clipping the branches of the nerve after dislodging the ganglion, but was obliged to remove the ganglion in sections with the curette and tissue forceps.

The fibers of the temporal muscle were sutured with achromic gut and the skin with ordinary catgut, the wound being closed without drainage.

Within four hours after the patient was put to bed his pulse became normal. Throughout convalescence temperature and pulse were practically normal.

On the fourth day after the operation the patient walked to the operating room and was dressed. There was no injury done to the right eye, and the area of analgesia extended throughout the whole of the distribution of the fifth cranial nerve of the right side.

Four days after the first dressing the patient went home. I have heard from the patient since, and he claims that he has never enjoyed better health and comfort except for the slightly "numb feeling" on the right side of his face.

Chronic Interstitial Pancreatitis.

BY EDWARD JENNER WOOD, S B , M.D., WILMINGTON, N. C.

C. H., negro, age 21, height 6 ft. 3 in., weight 160 pounds. By occupation a blacksmith; the greater portion of his work being the shoeing of horses.

Family History.—His mother died of phthisis when he was seven years old. His father is living and in good health. Two brothers are dead, one in infancy, the other from tuberculosis of the third and fourth cervical vertebrae following an injury. One sister died at five years of an unknown cause.

Previous Medical History.—At various times he has had malaria. At eight years he had some chronic eruptive disease, the exact nature of which can not be ascertained. It was probably not specific.

Two years ago, while shoeing a horse he was kicked in the epigastrium.

In December, 1903, he had a severe attack of what he says was influenza, and which lasted for several weeks. After a painstaking investigation into his family and previous medical history, together with a minute physical examination, I was convinced of an absence of both tuberculosis and syphilis, two diseases which I seldom find absent in any chronic condition among negroes. The presence or the suspicion of one or both of these diseases is, I think, a serious obstacle in the way of a more careful investigation of disease among the negroes in our Southern hospitals. We are often too prone to ascribe symptoms and conditions to one or the other of them. In this instance, however, I was morally certain of an absence of any tubercular or syphilitic taint. The patient had never had any venereal disease.

History of the Present Condition.—In February, 1903, he consulted me, complaining of weakness, orthopnœa, and

œdema of the whole body. He said he had never recovered from the influenza. The œdema had begun in his face and soon appeared in his feet and legs, and later in his scrotum. Finally the abdominal wall became œdematous. At this time there was no ascites.

Physical Examination.—When first examined the following notes were made: The heart enlarged to the right and the apex beat palpated in the sixth interspace, about one inch outside the mid-clavicular line. There were no murmurs. At times the cardiac action was considerably lacking in force. Again the heart's action would be tumultuous, while the radial pulse was almost imperceptible.

The liver was enlarged downward, two finger-breadths below the costal margin. The spleen was enlarged and palpable. Examination of the blood showed 70 per cent hemoglobin; 3,500,000 red blood corpuscles; no leucocytosis; no malarial organisms. The urine was free from all trace of sugar or albumen and casts. The specific gravity was 1018. The feces showed no signs of fat or fleshy particles. Ankylostomiasis could not be demonstrated, though suspected, and several doses of thymol were given.

The patient was put to bed and kept on a liquid diet. Instead of decreasing as we expected, the œdema gradually increased. Most unusual action of the heart was noted at this time. The rate decreased to forty a minute, and for ten days there was a marked irregularity of the pulse, the beats occurring in series of four each, with a pause between. There seemed to be some disturbance of the co-ordination of the heart, the right and left heart failing to act together. These symptoms were thought to be due to pressure. There was nothing other than the rate to suggest the Stokes-Adams syndrome. The patient was admitted to the James Walker Memorial Hospital on May 19th, with the above state of things unimproved. Daily examinations revealed considerable variability of the apex beat. At one time it would reach the mid-axillary line, while again it would be found two

inches or more within. At times there was a marked thrill over the apex. At this time, June, 1904, the patient complained chiefly of pain and distress in the epigastrium, hiccough, cough which was most obstinate, almost constant nausea and vomiting. Orthopnœa was distressing. The temperature was almost constantly subnormal. The upper abdomen, especially to the left of the midline, was so sensitive to pressure and even touch, that it could not be palpated. The pain in the upper abdomen was often intense, and quite frequently it was located higher up over the manubrium.

June 20, 1904: All the above symptoms persisted and were aggravated. The cough and orthopnœa was most distressing. It was almost impossible for the patient even to assume the recumbent posture. At this time a distension of the upper abdomen appeared, which increased rapidly, and which was strictly limited to the upper half, having the characteristics of a large cyst. The patient complained of great epigastric pain and tenderness. He could retain asbolutely nothing. A gastric analysis had revealed nothing. At this time the liver was markedly enlarged downward. The stomach was distended and pushed forward so that it was easily mapped out on the abdominal wall by inspection. It was evident that there was free fluid in the abdominal cavity, but it was not generally distributed. A carėful examination led me to the conclusion, which seems to have been correct, that the fluid was largely restricted to the lesser peritoneal cavity. The only explanation we could give for this condition was that in the rapid accumulation of fluid it had caused a sagging, so that the edges of the foramen of Winslow had become opposed and had thereby shut off the communication between the lesser and the greater peritoneal cavities.

An exploratory laparotomy was done by Dr. Burbank under cocaine anæsthesia. The parietal peritoneum was found to be greatly thickened. Two litres of clear amber-colored fluid were removed. The liver was greatly enlarged and had the characteristic nutmeg appearance. The patient was greatly

relieved by the removal of the fluid. This relief was only temporary, coma followed by death occurring soon afterward.

An autopsy was immediately done and the following conditions were noted:

Lungs normal.

Heart much enlarged, with dilatation of the cavities. The muscle was pale and friable. The valves were normal. Microscopic examination showed that the degenerative changes had reached an advanced state. The muscle fibres were frequently fragmented and segmented.

Liver was greatly enlarged; it was smooth and glistening in appearance, with the "nutmeg" mottling well marked. Microscopic examination showed a marked condition of chronic passive congestion.

Stomach much distended, but the mucous membrane was normal.

Spleen was practically normal. Either the accumulation from above had pushed it down and made it more readily palpable than normal, or else it had undergone a change from a much enlarged to a slightly enlarged organ.

Pancreas was somewhat enlarged. Its consistence was decidedly increased and its tail was bound to the spleen for such a considerable area and by such dense adhesions that it could not be torn away without mutilation. Sections were stained with Mallory's connective tissue stain, and I made the following observations:

(1) Marked accentuation of the interlobular connective tissue outline which normally is unrecognizable.

(2) Marked proliferation of connective tissue around blood vessels and ducts.

(3) Increase in the number of the islands of Langerhans. While there was new-formed connective tissue between the cells of the islands, still the degenerative changes were by no means marked, there being an absence of the deeply staining property of the nuclei of the cells, which condition is so frequently observed in degenerative changes. There was a

distinct connective tissue outline of the islands, but it was not so marked as in some forms of chronic pancreatitis. Immediately outside the islands the condition of the cells was good, but this normal state soon faded into an advanced degenerative one. The plasma cells of Unna were abundant in places. Throughout the glandular tissue fine fibrils of connective tissue were plainly seen, but not in such amounts nor in such large bundles as to crush out the cells. However, in places the connective tissue did occur in coarse, dense bands, and the life of the cells between seemed to be crushed out. In places there was a considerable amount of free blood, and also the blood vessels were well filled.

In most respects the microscopic findings were nearer in accord with Opie's description of chronic interstitial pancreatitis. There was not, however, the abundant proliferation of connective tissue that should be expected. In so far as the distribution of new-formed connective tissue goes, it comes nearer to conforming to his description of the interacinar type, which is much less frequent, having occurred only nine times in his thirty cases. Favoring the interstitial type was the fact that the degenerative process was plainly from the periphery to the centre; the unaltered condition of the islands of Langerhans, save a slight increase in connective tissue; the presence of plasma cells of Unna; the increased number of islands, and the exaggerated lobulation.

Several interesting features are presented in this case. Probably the most interesting is the age of the patient. In a series of thirty cases Opie found twenty between the ages of forty and sixty, and only five below the fortieth year. In Nothnagel's Encyclopedia there is a case of Rosenthal's recorded of a girl sixteen years old. While he could get no history of syphilis or tuberculosis, he comes to the conclusion that it was a case of latent congenital syphilis.

Opie found that pancreatic and biliary calculi were frequent etiological factors in chronic pancreatitis. There was in this case nothing indicating calculi, either during life or at autopsy.

Likewise malignant disease was a cause in five of Opie's series. All signs of malignancy were lacking in this case save the thickened peritoneum.

I had also to consider that class of cases which Opie mentions as ascending infection from the duodenum. In this connection he speaks of the frequency of chronic interlobular pancreatitis and persistent vomiting. An experiment by Carnot is cited where suppurative inflammation was caused by the injection of colon bacilli into the pancreatic duct. While this patient suffered considerably from gastric distress and vomiting, it was only after the disease had made considerable progress.

Unless we are willing to ascribe the etiological factor to syphilis, in the face of a peculiarly clear and reliable history to the contrary, there is no similarity between it and the etiological factor in any of Opie's series.

Gibbon has reported a case in his service at the Pennsylvania Hospital, where a cyst of the pancreas was caused by the kick of a horse, but it was an acute process and was relieved by an operation. The question as to whether the pancreatitis was due to the trauma referred to, or a sequela of an acute infectious disease as influenza, or was a part of a general condition in which the heart shared, is a question.

It is probably in the light of the history that the primary condition was pancreatic and that the heart was either co-incidentally affected or else shared in a general condition.

It is a striking fact that cardiac affections have been found in a large percentage of the cases of pancreatic trouble reported. Can it be that the relation of the heart to the pancreas is somewhat similar to the relation of the heart to the kidney?

I find no record of ascites restricted to the lesser peritoneal cavity. If there had been a pancreatic cyst the conformation of the abdomen could easily have been accounted for, but there was no cyst. If this were a constant condition it might be a valuable sign in pancreatic disease.

Ectopic Gestation.

BY H. S. LOTT, M.D., WINSTON, N. C.

Certain conditions are distinctly surgical: that of the misplaced product of conception is one of such conditions. Just why it occurs the various theories advanced have not explained to our entire satisfaction. That it does occur, and occur frequently, is the main fact of vital interest.

Most cases of the kind are supposed to have a previous history of sterility; but that this is not invariably the rule, I will show to you directly.

The accident is most frequent in women who have never borne children; but to this preference also, there are exceptions: showing that the impregnated ovum may pursue this erratic course, and implant itself upon soil beyond the uterine cavity, at all times throughout the child-bearing period of a woman's life.

The various points at which such impregnated ovum may stop, and begin its growth, may be traced from the ostium internum of each fallopian tube, throughout the extent of their lumen; or, migrating further, and leaving the tube by way of the ostium abdominale, it may drop into the peritoneal cavity, there grafting itself near the ovary, or, most likely, within the folds of the broad ligament, from which site, as its growth advances, and if the woman survive the rupture, which is sure to come, it may, at last, find its way into the retro-uterine pouch of Douglas.

Implantation, with growth of the ovum, at any of these points beyond the uterine cavity, is sure to bring disaster. Those occurring in the proximal half of the tube seldom reach the surgeon, as they are most apt to prove fatal at the time of rupture, and are either buried in obscurity or reported by the coroner.

Ruptured ectopic gestation is a clear case of bleeding from

a torn artery; and, with the lights of to-day, should be recognized and the patient saved. Would you hesitate in the presence of a stab wound of the femoral artery? Or would you cut down and tie the bleeding vessel?

The diagnosis, with the mental picture once established, should not be difficult.

In most cases there is a history of several years of sterility; then a suspicion of pregnancy, and during the early months, either with or without previous slight menstrual "show," the sudden occurrence of "intense abdominal pain," followed by "anxious countenance, acute anemia and collapse." (Price.)

Any case in doubt will be made clear upon making the incision through the abdominal wall, as the omentum will be found black, flooded with blood.

Of those occurring in the distal half of the tube, with growth and development there and elsewhere within the range of possibilities, two notable ones have come under my observation and care.

The first one was a colored woman, seen in consultation. She was about twenty-six years of age, and had been married several years without any pregnancies. Her attending physician reported that she had been suffering for several days with very severe abdominal pains, and that hypodermics of morphia had failed to give her entire relief. The patient's condition, at the time of my visit, bore out his description. I found her lying on the bed, moaning with the pain, and unable to keep in one position.

Seating myself at the bedside, I watched her for a while. The woman seemed to be well nourished and in very good physical condition. The eye was clear and bright, the tongue clean, and the lips of a healthy color. The breasts gave no distinctive evidence, and there was no enlargement of the abdomen. The pains were distinctly recurrent and paroxysmal; the woman's attitude, during the height of their intensity, suggesting an expulsive character. As the wave of pain arose the pulse would quicken, she would change her position

constantly in bed and make very bitter complaint of her sufferings.

Upon making a vaginal examination, I found very little to help me. There was a normal, virgin uterus, in relatively good position. No mass could be detected on either side, and there was no marked tenderness at any given point in the vaginal vault. In passing the hand over the abdominal wall, the sensitiveness of the left side was slightly more marked; but in the generally hyperæsthetic state of the woman, this gave little guide as to any localized focus or point for attack.

The woman's menstrual periods had been fairly regular. Some pain at each time, but not excessive in degree. It was now six weeks since she had menstruated, the flow failing to appear when last due.

Believing that such was the case, I told the attending physician that his patient had extra-uterine pregnancy, saying that I could think of no other process in nature that would cause her to be in this condition, and advised an immediate operation for safety and relief. In sheer desperation my diagnosis was accepted, and, on the following morning, the patient was placed on the table, in a negro cabin.

The abdomen was opened in the median line. Upon introducing the exploring fingers, the uterus was found and normally located. The tube and ovary of the right side were free and normal. On the left side, tracking from the fundus down, the tube and ovary were fixed to the pelvic floor; and, half-way the distance of the tube was a gestation sac about the size of a walnut. This was an expansion of the tube, and also on the point of rupture, which occurred almost as soon as the fingers came in contact with its presenting surface. Accompanying the rupture was the escape of a small quantity of watery fluid. Fearing hemorrhage, I at once enlarged the rupture and freed from the cavity a spongy mass entire, which proved to be a complete placenta, about the size of a silver dollar, with normal attached, or uterine, and fœtal surfaces. No fœtus was found.

Placing a silk ligature about the tube close to the fundus, and also one near its distal extremity beyond the point of expansion, I removed the portion of the tube between those ligatures. Feeling that I had accomplished my object in removing the product of conception, no attempt was made at removing the ovary from its fixed position to the pelvic floor.

Inspection of the portion of tube removed confirmed the feel it had given to the fingers, that it was an expanded fallopian tube, having harbored a gestation sac, and being on the point of rupture.

Being in some doubt as to the perfect toilet of the operation, and for the sake of safety, a gauze wick was carried down to the site of removal and brought out at the lower portion of the incision. Above this point the abdomen was closed with interrupted through-and-through silk-worm-gut stitches. The gauze was removed after twenty-four hours, from which time the granulation was rapid and healthy; all above this point uniting by first intention, and the stitches were removed on the tenth day. The patient's recovery, with immediate removal of distressing symptoms, was practically uneventful.

This case seems to me to be of interest for several reasons: for instance, the gestation sac could not have been more than six weeks advanced, and I have seen no report of a case found this early. And again, because the diagnosis was necessarily made from rational signs only, guided chiefly by the recurrent and paroxysmal character of the pains, which were exaggerated, no doubt because of the erratic location of the gestation sac, and finally leading us to believe that it is an inherent power of the ovum, and not the peculiar structure of the uterine walls, which causes the normal rythmic contractions of pregnancy and child-birth.

The second case was a much simpler one, inasmuch as the diagnosis, at the time of my visit, was comparatively easy. The patient was white and about thirty-five years of age. She had given birth to seven full-term children, and at the

time of this accident there was one child two years old, just weaned.

I was asked to see her in consultation, at her home, nine miles in the country. The history given me was, that some weeks before, while in town, she had a sudden severe pain in her stomach, followed by a fainting spell. She was given a sedative and ordered kept quiet for a while, before being taken to her home. Since this time, she had, for the most part, been confined to her bed with the frequent recurrence of fainting spells, either with or without much exertion.

Having a child at the breast, the irregularities in the menstrual flow, or even its seeming absence, had given her no solicitude, and she had not believed that she was pregnant.

At the time of my visit she looked as one who had lost much blood; the face was blanched, the pulse quick and thready, and the slightest exertion would cause a fainting spell.

Upon physical examination the abdomen was found to be somewhat full and very sensitive. Entering an ample vagina, the finger detected a uterus which had rather the feel of a subinvoluted than that of a pregnant one. On either side of the cervix throughout the vaginal vault, there was a fullness, somewhat like that of a presenting bag of water, although of rather more resistance, while behind the cervix bulging well down from Douglas' pouch and covered only by the retro-vaginal wall, was unmistakably the leg or arm of a fœtus, four or five months advanced.

The diagnosis of extra-uterine pregnancy being concurred in by the attending physician, the gravity of the woman's condition was explained to herself and her family, and it was decided to remove her to the Twin City Hospital.

Being nine miles distant and a very rough road to travel, this was a rather serious matter, with a woman almost in collapse. However, with stimulants and careful driving, it was accomplished, and the patient reached the hospital in safety; when, although it was near midnight, no time was lost in preparing her for operation.

With a pair of long half-curved and sharp-pointed scissors, the vaginal vault was punctured just behind the cervix and just where could be felt the presenting part of the fœtus. Introducing two fingers of the left hand and exchanging the sharp for the blount-pointed scissors, this opening was rapidly enlarged until it reached each lateral wall. To grasp its lower extremities and deliver the five-months fœtus through this opening was a very quick and a very simple matter, and one that was accompanied by an immense gush of black fluid blood and clots. The quantity of this I am afraid to estimate, but it was very large, being the accumulation of several weeks' hemorrhage. Being told that the patient had no pulse (which was a great comfort(?) to me at this juncture), I asked that she be given some salt solution; and, working rapidly as possible, by passing my hand well up into the cavity, which was on the right side of the uterus, I emptied it of blood clots and cleared away as much of the placental growth as seemed consistent with the safety of the structures to which it was attached.

The flow of black blood was really alarming, and several times the patient was thought to be dead; but I irrigated the cavity with several gallons of hot water, and finally by using very long and rather heavy wicks and carrying them high up, I packed it pretty full of gauze, and she was taken from the table breathing occasionally and with a very feeble pulse.

For several days and several nights it was a case of anxious watching and waiting, as the thread of life had been stretched to a very small fibre indeed. Stimulants were given constantly and the cavity was irrigated once or twice in each twenty-four hours with several gallons of hot water, until at last a faint smile of hope on the faces of the faithful nurses who had given me their help, gave me hope for the patient as well.

A most interesting feature of the after-care of this case was the sympathetic involution of the uterus, as this process progressed in the neighboring structures where the gestation had occurred.

Beginning soon after the removal of the fœtus, at each irrigation there would be quite a free and pinkish flow, just like a normal lochia, from the mouth of the uterus. This continued for about ten days, gradually lessening in quantity, and finally bringing away shreds, like cast-off mucous membrane. During this time the entire uterus diminished much in size, and the cervix lost its full, congested appearance.

The recovery of this patient was very slow and very tedious; but after five weeks in the hospital she returned to her home in pretty good condition. Within the eighteen months following this accident she conceived and carried a normal pregnancy to about the seventh month, and from that time her health has been most excellent.

This case is an exception to the rule that ectopic gestation occurs either in women who have not borne children, or that its occurrence is preceded by a prolonged period of sterility.

It also seems of interest because of the unmistakable history, which, coupled with the physical examination at the time of my visit, made the diagnosis comparatively easy, and also made us feel very sure that in spite of the fact of her condition being almost one of extreme collapse, through surgical intervention lay the only available hope for the future safety of the patient.

Removing the fœtus through the vaginal vault was not the method of my choice. But the patient was "in extremis," and this seemed really the quickest way, and the way which nature had pointed out for her relief.

Going in from above and making a clean removal of the ruptured tube, with safe ligation of all bleeding vessels, would have been a much more complete operation, lessened her dangers afterward, and very much hastened her convalescence, *if* she could have survived the more prolonged tax of her vitality. This was the question confronting me, and while I did not favor the vaginal route, I felt that I must defend, not only a principle and a preference, but the life of my patient as well.

How Far Shall we Go in Performing Multiple Operations at One Sitting.

BY H. A ROYSTER, A B., M.D., RALEIGH, N. C.

Every one who studies gynecology must be constantly impressed with the thought that simple, unassociated lesions of the female genital tract are seldom seen. The majority of women coming under observation are victims of a chain of pathologic events, originating often from a single cause, but progressing and gathering complications to the point at which relief is sought. Infection, traumatism and deformity are each in turn or together the sole sources of gynecologic disease. To make correct diagnoses in this branch of the medical art means more than merely discovering the diseased conditions present; it includes also a search for the focal lesion, whether it be a primary affection or a secondary one, and a summing up, so to speak, of the elements responsible for the morbid state of the patient.

Furthermore, since upon an intelligent diagnosis depends the proper management of a case, it is evident that, to apply correct surgical principles to the special diseases of women and to effect permanent cures, one must have clear ideas of the existing faulty conditions and of the means necessary to restore them to the normal. Sound judgment and a certain peculiar insight are the essential qualities. Largely from experience is the right attitude developed.

To come to the question at issue, then, it is enough to say that the gynecologist is nine times out of ten confronted not with a single lesion but with numerous disorders. For the relief of these he must evolve an operative plan embracing a complete restoration of the parts concerned, and the plan must be carried out in a certain definite order without damage to the local organs or to the body at large. It is imperative that he should know exactly what to do, but, above all, he must

know what not to do. For example, it is of the utmost importance to be familiar with the different procedures directed toward the cure of a retroversion of the uterus, while on the other hand, it is of equal moment to know that a simple curettage will suffice in some cases of cervical tear, and that a trachelorrhaphy or an amputation may be dispensed with.

It is necessary again, to be certain when to refrain from entering the abdominal cavity, and when to depend upon the external plastic work.

Obviously, when multiple operations are demanded (and it must be admitted that this is the rule rather than the exception), it were better to do them all at one sitting. The patient is thus spared taking an anæsthetic again, she is saved the additional suffering and confinement to bed, and the chances of cure are equally good. There are limitations, however, to the number of operations that ought to be done at one sitting, and, perhaps, in a given case there are contra-indications which might make one or more of them inexpedient. The chief matter is the amount of time to be consumed. A careful estimate of this should be made beforehand, and, with an eye to the patient's powers of endurance, the definite methods outlined and arranged. Here is the place for the surgeon to practice that speed which is consistent with safety and thoroughness, and to feel, with James R. Wood, that "an operation well done is quickly done."

To mention concrete instances: A woman with prolapse of the uterus needs at least five different operations; for a retro-displacement, almost as many are to be performed; in nearly every case the adnexa demand notice; and even the simplest operative course is unfinished without a preliminary curettement. When these routine measures are carried out in order, there is every reason to believe that the patient will be relieved; by leaving off even one of them, you lessen that much the chances of success. Each procedure is essential, and altogether they may be regarded not as several distinct operations, but as separate steps of one operation, which

would be incomplete were a single feature omitted. Those who do this sort of work repeatedly encounter such cases. Failure will be the portion of him who does not decide wisely and well or operate swiftly and surely. In addition to this, the operator is frequently called upon to say whether he will remove diseased tubes and ovaries which may present themselves; also to consider the excision of a morbid or adherent appendix, or a gall-bladder full of stones, and, finally, he may have a floating kidney bobbing up to test his surgical sagacity. These matters are to be settled on a basis of the time-limit, guided by that diagnostic discernment which picks out the major lesion and marks it for riddance. In the case of prolapse and in retroversion, too, the operative procedures must be done in a group as suggested, while in that of the adnexa, and in the more remote conditions of appendix, gall-bladder and kidney, it may be necessary, or not, to attend to them, according to whether they are the main offenders, keeping always in mind the patient's strength. Some women are such pathological museums that we should never be sure just where to stop, if the attempt be made to repair everything found out-of-gear. And yet all of us are in continual danger of overlooking the important element and of sending the patient out unrelieved after a multiplicity of properly performed operations because of failure to find the fundamental factor. What a strong plea for better history-taking and closer physical examinations!

By no means is it wise to do additional operations upon remote organs or even adjacent ones, unless such operations are a part of a well-formed plan of attack directed against definite disease with the expectancy of alleviation. Some surgeons have seemed to think that "because an operation *can* be done, it *ought* to be done."

In gynecology, possibly more than in any other department of surgery, it has been shown that there is more frequent need for so-called multiple operations. Doing the same kind of work over and over again should make the operator more

dextrous and able to cover the ground more rapidly. The slow surgeon, the chronic operator—has no business here. Neither is there any reason for troublous haste. The following seven procedures have been repeatedly done in our work, viz., curettage, amputation of the cervix, anterior colporrhaphy, perineorrhaphy, and ventro-suspension, with the removal of an ovary and of the appendix in an hour and five minutes without being unduly hurried. The point is, to regard all these as successive stages of an operation for the cure of uterine prolapse, including attention to complicating maladies which have given the patient discomfort. If there are sound indications calling for this additional interference, and it can be accomplished without hurt and within the time to be allotted, there could not only be no objection to, but there is urgent necessity for, the extra work. The reverse of this proposition would furnish sufficient reasons for doing only the essential things. What those things are it should be our aim to determine by observation, by experience, by a well-seasoned instinct. To be dogmatic is fatal.

Puerperal Eclampsia.

BY FLETCHER R. HARRIS, M.D , HENDERSON, N. C.

Every pregnant woman should be treated as a possible case of puerperal eclampsia. No physician should assume the responsibility attending a case of confinement unless he be furnished statedly with sample of urine and unless the patient will carry out his instructions as to diet, exercise, etc. The proper treatment for puerperal eclampsia is to prevent it. This can be done in a great many cases; but, unfortunately, not in all.

Statistical tables go to show that eclampsia occurs about once in 500 cases. If I may judge from my own experience, which extends over a quarter of a century, this estimate is far too low.

To prevent eclampsia, see that your patient takes outdoor exercise religiously. See that she is fed scientifically. (This varies with the case.) See that she drinks water plentifully. See that her bowels are kept well regulated; in other words, see that the emunctories are discharging their full duty and, I repeat, NEVER fail to examine her urine statedly.

The attack may occur without warning, but usually there are premonitory symptoms which should not fail to put the physician on the alert.

If a pregnant woman has disturbances of vision or hearing, frontal headache, epigastric pain, œdema, scanty urine, and especially if the urine contains albumen and casts, convulsions will surely come unless prompt means are used to avert them.

When any of the above symptoms manifest themselves, the patient should at once be put upon a restricted diet, or, better still, put her on milk exclusively for a while. Have her drink water freely—preferably, possibly, some lithia water.

If the symptoms do not rapidly disappear, give her a brisk purge of epsom salts and stimulate the skin, etc.

If under this treatment the symptoms disappear, the albumen becomes less and urea increased in amount, the outlook, ordinarily, may be considered good; on the contrary, if the albumen steadily increases, and the urea decreases and the symptoms remain unchanged, you may look out for results, for the danger signals are all up.

ETIOLOGY.

It seems perfectly natural that our ancient brethren considered this a disease of nervous origin akin to epilepsy.

Lever in 1843 traced a connection between the epilepsy known to the accoucheurs and albumin in the urine, but seven years later Churchill calls all convulsions occurring in pregnancy and childbed epileptic, except a comparatively rare variety, apoplectic convulsions. He treats at length of the causes, but makes no reference to albuminuria under that head.

Frenichs shortly after advanced the theory that the cause was the presence in the blood of carbonate of ammonia, derived from the decomposition of urea.

Its presence has been proven chemically.

During the controversy, Traube advanced the theory that œdema and acute anæmia of the brain were the cause of the convulsions and coma, and therefore regarded eclampsia as resulting from changes in the cerebral circulation produced by hydremia, and considered the renal changes as merely contributive to, but not the original cause of the convulsions, and hence not a necessary prelude to the same. He was supported in this by Rosenstein. This was known as the Traube-Rosenstein theory.

Another theory was, local anæmia of the great nervous centers, produced primarily by an insufficient supply on account of the heavy demand from the pelvic organs, and their being still further starved by the impoverished condition of even that insufficient supply.

Another theory, which had for a long time many supporters, was that the disease of the kidneys to which eclampsia was thought to be secondary was caused by pressure of the enlarging uterus upon the ureters and renal veins. If this were the correct theory, then we would have eclamptic seizures in cases of large deposits of carcinoma or tubercle or other tumor masses in the pelvis.

In a paper on auto-intoxication written some years ago by Bouchard, he showed that whilst the urine in health injected into the veins of an animal was strongly toxic, in eclampsia it was much less so, thus indicating the retention of such poisonous material in the blood and its non-elimination by the kidneys. There is an extraordinary cell activity going on through the process of gestation, both of mother and child, producing excrementitious substances greater than can be voided by the excretory organs, unless their activity is increased in the same ratio. If these organs in the pregnant woman become inadequate to the disposal of this effete material, we have poisons of a nature not yet fully known stored up in the maternal system, until by the cumulative action, their presence is manifested by an eclamptic seizure.

Further, there is a plus activity of the nervous system in a pregnant woman as in a child, and of the vasomotor centers in particular.

The poison having accumulated in the circulation which is controlled partially by the vasomotor system, which is again under control of the nervous system, you see a cycle of circumstances which tend to bring about the results of the subject, varying according to the variation in stability and the inhibitory power of the nervous centers in different individuals, and also according to the amount of poison present.

This poison may be that of a uremia, acetonemia, anuronemia, or toxemia. I will say frankly I do not *know* the cause of eclampsia. No one particular poison has been proven to bear a causative relation to eclampsia. I believe it is the result of a combination of all these substances found,

together with an unstable nervous system. (As scientific men we should never be satisfied until we have found the cause, and then we can treat it rationally.)

TREATMENT.

When the convulsion comes on, then the time to act is on as well. Get your patient as quickly as possible under chloroform. Send for assistance, but never wait for assistance or anything else, for the moments are now golden. I repeat, the moments are now golden.

See that your forceps are sterilized, and be careful as to *asepsis,* because these cases are peculiarly susceptible to infection.

With your patient anæsthetized, your hand clean, dilate the cervix without delay, but not with *undue* haste. Keep a cool head and a steady hand. Let your motto be *"Suaviter in modo, fortiter in re."*

By the time the cervix is dilated, probably your assistant has come. Turn the responsibility of the anæsthetic over to him and deliver the child. When delivered, remember that meddlesome interference is now criminal. Darken the room and keep everything quiet. If your patient is restless and threatened with another convulsion, give her one-half gr. morphia hypodermically. (This is theoretically wrong, but experimentally correct.) If she have a second seizure, repeat your morphia (one-quarter gr.), and with a full, bounding pulse use Norwood's tinct. veratrum hypo. 20 minims p. r. n. until pulse is 60. Give her cathartic. Have her drink water freely, and your patient will get well.

The books tell us that the mortality varies from 20 to 25 per cent. If you will pardon me, I will say under the above line of treatment I am yet to lose my first patient when present at the time of the first convulsion.

Obstetrics and Surgical Arts.

BY H. M'KEE TUCKER, M D., RALEIGH, N. C.

The practice of obstetrics is almost entirely surgical, as it is practically a mechanical process so far as the treatment is concerned that is needed for those pathological conditions due directly to the pregnancy. For instance, the pathological conditions that may occur during the time the woman is carrying the child, viz., displacement of the pregnant uterus, fibroids and dermoidcysts (these should be mentioned on account of the rapid growth which pregnancy occasions in them), diseases of the cervix, vaginal leucorrhœa, vegetations and vagices of the vagina and vulva, pruritus, œdema of vulva, periuterine inflammation and adhesions, disease of the breast, alimentary canal, urinary and nervous systems, the heart hemmorrhoids, abortion and extra-uterine pregnancy. Practically all of these are conditions which require surgical treatment with the exception of a few of them, such as disease of the breast, alimentary canal, urinary apparatus, nervous system and heart. Even of these a large number have to finally be relegated to surgical procedures in order to save the patient's life. Unfortunately in these, I am sorry to say, I fear medication is often continued too long before obstetrical operations are resorted to. I am sincere in making the statement that I believe many lives have been sacrificed by the doctor arguing to himself, or to his fellow-consultant, that nature will take care of her and consoling himself with this nature balm and the medicine he has given her, lets her drift and drift into a condition where, when finally surgical intervention is sought, it will be too late to save his patient, whereas if it had been used in time *and properly,* the patient who died would often have been saved.

Doubtless many of you can recall cases when you cast your minds back, such as approaching eclampsia, and uncontrol-

able vomiting, which might have been saved, if you had trusted your own surgical ability and interrupted pregnancy before the fatal issue was at hand. So much for the conditions arising from the pregnancy.

Now let us consider pathological conditions and accidents which arise during labor: uterine inertia, excessive expulsive forces of labor, deformed pelves, artesia of the cervix, vagina hematoma of the parturient tract, tumors of the soft and bony structures of the pelvis, gangrene of the vulva, displacements of the uterus, prolapse and elongation of the cervix, carcinoma and fibroid of the uterus and cervix, cyst of the ovary, overgrowth of the fœtus, hydrocephalus, twins, prolapse of the umbilical cord, placenta praevia, premature detachment of a normally situated placenta, eclampsia, ruptured uterus, retention and adhesions of the placenta, faulty positions and presentations. You will at once see that practically all this long list are distinctly surgical.

During the puerperium the conditions most frequently demanding operative measures are diseases of the breast, lacerated perinei and complications of puerperal sepsis.

The reasons for this paper are to show by the foregoing that obstetrical practice is mostly surgical, and for the purpose of calling your attention to the great importance of recognizing any of these complications early, and *when* recognized, in order to get the best results, the operation must be done properly, and in order to do this some surgical training and knowledge must be possessed by the operator, and unless he has some obstetrical operative skill, he doubts his ability and puts these off altogether or until it is often too late.

Consider the great number of lacerated perinei that are certainly seen in gynecological examinations, and the many deporable conditions that result secondarily from these lacerations. How do you explain so many? Is it that they are not recognized at the birth of the child, or if recognized not sutured because there are some who feel their inability to sew the more extensive tears, or is it that they are recognized,

but the doctor often not caring for surgery, eases his conscience by saying "The raw surfaces will unite by coaptation"? I wish none of these were the proper explanation, but alas! I fear a great many lacerated perinei and their sequelæ which have made invalids out of healthy women, who have trusted themselves to us during one of the most trying times in their life's history, are explained in this way. Such practice is very wrong and should appeal to the conscience of man.

Again take dystochia, which is a great large subject within itself, so much so that I shall not go into the detail of the causes and their treatment, but do wish to speak briefly of a few of the most common causes, such as those cases of uterine inertia, which are slow to respond to medical stimuli or sometimes not at all, those cases where there is a disproportion between the passage and the passenger, due either to a very large child, hydrocephalus, etc., or to a contracted pelvis or to rigid and compact soft parts, and also to those cases of faulty presentations and positions. In any of these cases why is it necessary that the mortality should be as high as it is? Because most obstetrical cases being normal, doctors ofttimes get into the habit of not thoroughly examining their patients; presuming everything normal, they wait, and therefore often do not realize some of these complications until the child is dead from prolonged pressure or the mother is worn out from fatigue and in no condition for an operation when the true state of affairs is finally realized; many practitioners, having a distaste to surgery, have not acquired the surgical skill and facilities that are most necessary for the good outcome of such conditions.

A very common cause of fœtal death is that the doctor either keeps waiting for the child to be born naturally, and after hours it is born dead, due to prolonged pressure, or he waits until it is dead and then applies forceps. In this one way enough children have been sacrificed to have made a great army! Forceps operations are practically without

danger when properly applied, and of incalculable value. Yet how often are children sacrificed from their non-use! Why? Because the doctor either does not realize the indications for forceps, or if he does, for some reason unexplainable he does not put them on, or doubting his ability, he keeps waiting, hoping that nature will finally cause the child to be born. It would be so easy in the majority of these cases to tell when fœtal life is threatened by counting the rate of the fœtal heart.

In the cases of face presentation, with the chin well posterior, the mortality should be practically nothing if these conditions are diagnosed in time, and this can always be done if the proper examination is made early enough.

Yet ruptured uterus, as a rule, is the result of improper management of labor; here again not applying forceps or instituting some operative procedure when rupture of this organ is threatened.

The conclusions I wish to draw from this paper are, (1) that a busy general practitioner, often from overwork, does not examine his patients as thoroughly as he should, and in this way fails to detect those conditions which predispose to serious complications: (2) that the best results can only be obtained by these complications being recognized and treated with the best surgical precautions and skill.

Finally, if for no other reasons than the necessity of knowing how to clean your hands properly and have your patient prepared likewise, the practice of obstetrics is still a *surgical* procedure; for, until the time of the recognition of the infectiousness of puerperal sepsis and the necessity of proper disinfection of the hands, probably more mothers died from puerperal sepsis than all other causes connected with childbirth. Even to-day there are those who really do not carry out this hand-disinfection, and to these I know no better words to utter than those of Oliver Wendell Holmes in his paper on "The Contagiousness of Puerperal Fever":

"It is as a lesson rather than as a reproach that I call up

the memory of those irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation, when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to whom she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly!"

Symphysiotomy and Report of Case.

BY J. A. WILLIAMS, M.D,, REIDSVILLE, N. C.

In introducing this subject to the Society, I will give a little of the history of this operation.

It was first done in Paris in 1768 by Jean Rene Segault, without any apparent results. It was also done by several of his adversaries a few years following this period. Then for the century following it passed into oblivion in France, Germany, England and America, except as a matter of historical interest, being upheld alone in Italy. Morisani a century later had the honor of presenting this operation again to its recognized place in the practice of obstetrics. Thus in 1881 he reported to the International Medical Congress of London fifty cases, which he had operated upon within the past fifteen years, with the result of saving the lives of forty-one mothers and forty-one children.

Still later Spineli reported having operated on twenty-four cases, out of which he saved the lives of twenty-four mothers and twenty-three children. He demonstrated for the first time that a living child could be extracted at full term from a pelvis measuring not less than two and one-half inches, and without danger to the mother under the proper antiseptic precautions.

In 1891 Harris brought forth the subject again in America, by an article read before the American Gynæcological Society, demonstrating the fact that under proper antiseptic precautions by this operation the life of a child might be saved without any apparent danger to the life of the mother.

In performing this operation it will be well to take into consideration that we may gain in facilitating delivery from two sources:

1. Is the increase of sacro-pubic distance, or a gain in the conjugate axis of from a quarter to one-half an inch.

2. In the descent of the head; the segment of this part may occupy the space between the separated pubic bones, the result and gain depending upon the width in the gap between the ends of the bone and in the convexity of the child's head. In this operation it is also well to take into consideration that forcible extension of the thighs increases the line of the superior straight, and that forcible flextion of the same with abduction increases the line of the inferior straight.

In reporting the case which I have to present to you I had no alternate or choice of operations between craniotomy, symphysiotomy and cæsarean section, but had to submit to symphysiotomy solely on account of the law of environments.

Early one morning in May, 1904, I was called by a physician in consultation, to see a colored girl, who lived about five miles in the country. On my arrival I found that she was a girl of twenty-three years, primipara, who had been in labor for twenty-four hours, having had quite severe pains during all this period, and having had repeated doses of strychnine and quinine. On examination I found the cervix well dilated and the head presenting, though not fixed. She apparently had a normal pelvis. I therefore, without further examination, waited after giving a hypodermic of strychnine, with a repeated dose of quinine, and after seeing that she had several hard pains without result whatever, and after such severe contraction of the fundus, I decided to use the forceps and deliver her. These I applied quite easily and begun traction with each pain. I soon found that this was impossible, as the head was hard and more or less ossified and all out of proportion to the normal pelvis, and on account of its ossification was impossible for the process of moulding to take place. Then I had the operation of craniotomy, cæserian section and symphysiotomy, one of the three, to present itself to me.

I found myself five miles in the country, in a little single-room log-cabin, without the necessary instruments for craniotomy or cæserian section. The woman's pains were hard

and she was becoming weak and haggard, without any results whatever. I had a small pocket case, out of which I took a small scalpel, a silver catheter and a needle. After boiling these, I placed the patient in a lithotomy position, and after being put under chloroform I introduced the catheter into the bladder and thoroughly emptied it. I then had the assistant to take hold of the catheter, as it remained in place in the bladder, and pull the whole urethra with the clitoris to the right side of the symphysis; then with a simple stick puncture of the mucus membrane beneath the pubic joint with the point of the scalpel, and pushing it gently up behind the pubic joint, passing my left forefinger up behind the joint as a guide, until the blade reached the top of the back part of the joint, then turning the blade forward, I cut the inner part of the capsular ligament, bringing the knife from behind forward, separating the entire joint. As soon as the cartillage and ligaments were cut through the pubic bones separated at least from three-fourths to an inch; the knife was withdrawn and also the catheter. I then allowed the patient to relax from the chloroform, and with the first hard pain following, the child's head was born and delivery soon completed without any laceration of the soft parts whatever. After waiting about thirty minutes I delivered the placenta. The puncture of the upper vaginal wall beneath the pubic joint was only one-fourth of an inch in length and about one-fourth to three-eighths to the left of the median line; the parts being thus retracted to the proper position, after removing the catheter. In this puncture I simply took one cat-gut suture to close the puncture. The patient was given a hot bichloride douche, and a bandage made by folding a sheet, was fastened tightly around the hips to draw the two ends of the pubic bone together. The bandage was kept in place for two weeks, being occasionally changed. The patient was given a bichloride douche of one to six thousand solution a day. She was kept in bed for six weeks before she was allowed to sit up. She never had to be catheterized during

this time, nor at any time did she have a rise of temperature. She is now strong and in good health and nursing for her occupation. The joint is firmly united without any impairment to walking whatever.

I report this case simply as one of interest. Craniotomy might have been indicated in this individual case as the child died soon afterwards, having a deformed head, becoming ossified, due to hydrocephalus. The measurements of the head were as follows:

		Normal.
Occipito-Mental	$6\frac{1}{4}$ inches	$5\frac{1}{4}$ inches
Occipito-Frontal	$5\frac{1}{2}$ inches	$4\frac{1}{2}$ inches
Bi-Parietal.	$4\frac{1}{2}$ inches	$3\frac{3}{4}$ inches
Cervico-Bregmatic.	$5\frac{1}{4}$ inches	$3\frac{3}{4}$ inches

These measurements alone show the head all out of proportion to the normal pelvis, the bones being hard and not susceptible to the process of moulding. I was left to operative procedure alone; the choice being due entirely to the environments and lack of instruments to do craniotomy, having only a scalpel and silver catheter with which to perform the operation.

As to matter of choice as to which should be done I think it should be left entirely to the individual case and the individual operator, as to which he can do best, quickest and with the least danger to the patient and child, saving the life of both if possible.

The Surgical Treatment of Gastric and Duodenal Ulcer.

BY ARCHIBALD C. HARRISON, M.D., BALTIMORE, MD.

For all practical purposes we need attempt but little, if any distinction between gastric and duodenal ulcers, as their pathology and treatment are virtually the same. Though their symptomotology possesses certain features which frequently enable us to differentiate the one from the other, it is by no means always true, for often the symptoms are so intermingled as to make differentiation impossible. From the standpoint of treatment, however, distinction is unimportant.

It is, comparatively, a short time since these conditions came within the range of surgical contemplation and only within the past few years has surgery begun to consider their curative treatment within its legitimate domain, save in those overwhelming catastrophies of perforation. Owing to the diligence of a few men, notably Mikulicz and Robson abroad, and Murphy and the Mayos at home, gastric surgery has been brought up to a position of well recognized efficiency and is now rapidly becoming more and more generally adopted for the relief of the graver forms of gastric intestinal troubles. As in the history of appendicitis and biliary disease, the more familiar we become with them the more frequently we find them occurring; and so with gastric and duodenal ulcers. The more frequently these cases are investigated by opening the abdomen antimortem the more frequently do we find them to be the underlying cause of heretofore ill understood conditions, and the list of socalled eurasthenic stomach grows proportionately smaller. I am inclined to believe that even perforation of these organs is frequently unrecognized and passes for some other condition. A case in point is one occurring recently in the practice of a brother surgeon, in which perforation of the stomach took place at 4 A. M. one night and was not recognized until 2 A. M. the

following night, when he was called in. This, notwithstanding the fact that the case was in the hands of a most admirable physician. The man died of general peritonitis in spite of operation. In these cases, like all other perforations of the intestinal tract, time is the all important factor. It is abundantly established that, all things else being equal, the great majority of cases operated upon during the first twelve hours will recover, while after this time most of them will die. I would like to emphasize the fact, therefore, that gastric and duodenal ulcers are far more common than is generally thought by physicians at large and their disastrous results will account for many of the obscure conditions occurring in the upper abdomen, both acute and chronic.

I make these statements not only because that is the trend of opinion among those who are doing much work along these lines, but because of the following facts; we know that ulcer of these organs is fairly common and we know from postmortem tables that perforations occur from these sources in from 6.5 to 28.5 per cent, according to the various estimates of various authors. We also know that gathering all the reported cases that have been operated on, both early and late, statistics show that about 40 per cent of recoveries, while in Baltimore, with all its big hospitals and great surgeons, there has been but one case reported that has recovered after perforating gastric ulcer. It must be, therefore, that these cases came under the surgeon's care either too late or not at all, else there would surely be a greater number of recoveries reported. It seems highly probable that gastric and duodenal ulcer with their resultant pathology (adhesions, distortions, etc.,) cancer and biliary disease, will account for most of these graver chronic conditions usually passing for "stomach trouble." I do not mean by this that all these conditions are immediately surgical. We are not far enough along yet to draw hard and fast lines. When each case shall be turned over to the surgeon must be determined by individual

judgment. I do not even advocate operation for all gastric and duodenal ulcers, but I do plead that it be not left for last resort. Its good results have been abundantly proven to justify the claim that it should be practiced promptly in—

1st. All cases of severe or repeated hemorrhage resulting from these causes.

2nd. At the earliest possible moment in perforation.

3rd. In all that larger class of chronic cases that have failed to recover after a reasonable time of proper rest and medical treatment.

It is probable in the near future operation will be even more strongly advocated because it seems to be pretty well shown that a very large per cent of medically cured cases will suffer from relapse or recurrences, and it is stated by W. Gilman Thompson, that 2 out of each 9 cases that have shown hemorrhage ultimately die directly or indirectly as a result of these ulcers.

Of course we cannot yet say that there is no probability of recurrence after surgical cure, as this form of treatment has not yet been sufficiently generally adopted, nor has time enough elapsed to enable us to speak with certainty. But so far results seem to show that relapses are rare. The result depends largely upon the thoroughness with which the work is done and as the various operative procedures become perfected, after trouble will be more remote. It must not be presumed, of course, that operation is to be lightly undertaken for these troubles. A rigid technique, a great deal of experience and some dexterity in the manipulation of intestines are the prerequisites for success.

As illustration I wish to present three cases representing types of the conditions under discussion.

Case 1. Male, aged 40 years. March 15th, 1903, after a rather full breakfast and while walking on the street he was seized with violent pain in the upper abdomen. This quickly became general and he fell to the pavement in a state of extreme shock. Seen at City Hospital eight hours after on-

set, the picture presented was that of some grave intra abdominal catastrophe. A short history showed this to be, in all probability, perforating gastric ulcer. Immediate operation. Abdomen filled with large quantity of bile stained fluid in which there could be seen particles of food. Perforation at the junction of lesser curvature with the oesophegus. It was round and admitted the little finger with ease. The walls were brawny and exceeded one-half inch in depth. Closure with double raw mattress sutures and lesser omentum stitches over the entire area. Thorough irrigation and multiple gauze drainage. Subsequent course fairly smooth to 27th or 28th day, when he developed an abscess under the right lobe of liver. This was opened under cocaine and drained. No further complications. For six months he enjoyed fair health, but since then has repeatedly entered the hospital for medical treatment. Hæmatemeses has been the predominating feature in latter attacks, but he persistently declines any further surgical treatment.

Case 2. Male, aged 24. Referred by Dr. John Ruhrah. Long history of gastric troubles with pain and frequent vomiting after food, blood in stools. Operation March 24th, 1905. Old duodenal ulcer with many and dense adhesions about pylorus, duodenum and right lobe of liver. Veins markedly varicosed over all the viscera. Adhesion divided and posteria gastro-jejunostomy done. Subsequent course normal. General condition much improved. Eats well, but has vomited once or twice as a result of over eating.

Case 3. Female, aged 23. Referred by Dr. Julius Friedenwald. Long history of stomach trouble; pain, vomiting and haematemesis. Emaciated and very anemic. Operation April 18th, 1905. Stomach dilated. No adhesions. Ulcer at pylorus extending into stomach and duodenum. Posterior gastro-jejunostomy. After history normal. Eats well. Occasionally vomits some bile stained fluid, never any food. No pain, no hemorrhage.

A State Society for the Prevention of Tuberculosis.

BY MARTIN L. STEVENS, M.D., ASHEVILLE, N. C.

That tuberculosis is a preventable disease and that its ravages can at least be lessened by an organized crusade against it, we all know. That the various local, state, national and international organizations for the prevention of tuberculosis have already accomplished much good, we also know. That every state should have an organized society energetically at work in this crusade, no one will gainsay. That especially our own state, with its mecca for consumptives in the west, and its high mortality among the negroes from the same disease in the east needs to be awake to preventive measures should be apparent to all. That the medical profession should in this, as in all other matters of preventive medicine, take the initiative, everyone admits. Many of the States have already organized and entered into the work. Ours has not. Questions which present themselves in this connection are, How should such an organization be brought about in order to secure the greatest and most effective co-operation, and where and when should it be started? Upon these questions I desire to speak as briefly and concisely as possible.

The various anti-tuberculosis societies throughout our land have had their inception in various ways. Some are mere committees appointed by the State Governors or created by the State Legislatures to investigate certain phases of the tuberculosis problem. Others are committees of their respective state or municipal societies. Still others are separate, permanent societies working in harmony with the State Board of Health and the State Medical Society and either independent of, or auxiliary to a central or national association. I will not take your time by discussing the relative merits of these various plans of organization, as I

think all who are familiar with the scope of the work will see the superior advantages is of the plan last mentioned.

Last year the President of our State Society, in his annual address, pointed out the need of organized effort in combatting this disease. The Secretary of our State Board of Health ably outlined some protective measures needed, and offered a set of resolutions placing the society on record as to protective measures necessary. These resolutions were unanimously adopted. Various persons have felt and spoken of the need of organizing the workers in our state who are interested in this subject. But such organizing is not entirely free from difficulty. In our own town, Asheville, where so many patients congregate, and where we see so much need of preventive measures, it would be a comparatively easy matter to organize an active anti-tuberculosis society. But I fear it would be looked upon as a *local* society organized to meet a *local* need, and that there would be trouble in interesting the rest of the State in it. Tuberculosis must be prevented outside the health resorts as well as in them. To get together representative men from all parts of the State for the purpose of effecting such an organization would not be an easy task. Moreover, no one feels authorized to call such a meeting. And an organization that is not representative would be of questionable benefit.

At no time, and at no place do we get together so many of the cream of our profession as at our Annual State Medical Society meetings. At no time and at no place could the organization of a State Society for the prevention of tuberculosis be more easily and properly effected than at the time and place of our annual meeting.

Therefore, if it is clear to all—and I am sure it is—that such an organization should exist, I trust that some one will offer a resolution to the effect:

That it is the sense of this Society that our State should have an organization for the prevention of tuberculosis.

That such society should be formed at the time and place of the meeting of our State Medical Society when representative men from all parts of the State are present.

That our President be requested to appoint a committee to prepare a provisional constitution and to call a meeting for the purpose of organizing a State Society for the prevention of tuberculosis.

Physical Evils of Child Labor.

BY A. J. M'KELWAY, ASST. SEC. OF NATIONAL CHILD LABOR COMMITTEE.

(Abstract of Address before the Board of Health, at its meeting in Greensboro, May 24, 1905.)

When the health and the vitality of a large number of our own people are concerned, to whom shall we go save to the physicians, whose ministry it is to usher life into the world, to save it and to prolong it, and to whom, therefore, life itself should be a more sacred thing than to the ordinary man? When I think of our little children of the Southern States, with their splendid physical inheritance, and how much it costs to bear them and rear them and train them, it does seem a pity that this stock should be depreciated by putting the child to work for the man's long working-day.

The evil is a national and not a sectional evil. But because of its newness in the South we have been the last to remedy it by legislation, and the proportion of child to adult workers is four times as large in the South as in the Northern or Western States. The physiological question is, whether children under fourteen years should be allowed to work in a factory for twelve hours a day; especially whether young girls between the ages of twelve and fourteen, in this climate should be allowed to do the spinning and weaving that falls to them, at this critical period of their lives, during the twelve-hour working day which is the rule in North Carolina and the cotton manufacturing States of the South; whether children of either sex under fourteen should be allowed to work during the night.

It may be of interest to you to know that the first public protest made against this evil, which has been the curse of the cotton mills especially for a hundred and fifty years, was made by physicians. Dr. Thomas Percival, author of "Medical Ethics," made an investigation of the causes of an epidemic of fever in the Manchester mill districts which had been accompanied by frightful mortality among the children.

Dr. Percival and his associates were unable to ascertain how the fever originated, but they were unanimous in their opinion that it had been "supported, diffused and aggravated by the injury done to young persons through confinement and too long continued labor, to which evils the cotton mills have given occasion." And they passed the following recommendations to the Manchester magistrates:

"We earnestly recommend a longer recess from labor at noon and a more earlier dimissal from it in the evening to all those who work in the cotton mills; but we deem this indulgence essential to the present health and future capacity for labor to those who are under the age of fourteen; for the active recreations of childhood and youth are necessary to the right conformation of the human body."

This was in 1784. In 1796 Dr. Percival and his associates in the medical profession had formed themselves into the Manchester Board of Health. They felt it incumbent to lay before the public the result of their inquiries into the condition of the cotton mills of Manchester. They said: "It appears that the children and others who work in large cotton factories are peculiarly disposed to be affected by the contagion of fever." And among the causes of this they found one to be "the want of active exercise which nature points out as essential in childhood and youth to invigorate the system and to fit our species for the employments and the duties of manhood." They went on to say:

"The untimely labor of the night and the protracted labor of the day, with respect to children, not only tends to diminish future expectations as to the general sum of life and industry by impairing the strength and destroying the vital stamina of the rising generation, but it too often gives encouragement to idleness, extravagance and profligacy in the parents, who, contrary to the order of nature, subsist by the oppression of their offspring."

It would have been well if England had followed the advice of her physicians at once instead of fighting over the

question inch by inch for a hundred years; for in that time the physical vitality of the factory populations has been fatally sapped. This is now known to be the real secret of the disaster to the British army in the South African war.

Dr. Charles W. Roberts of England gives the following striking results of the examination of 19,846 boys and men, of whom 5,915 belonged to the non-laboring class and 13,931 to the artisan class. The difference in height, weight and chest girth, from thirteen to sixteen years of age, is as follows:

HEIGHT (INCHES).

Age	13	14	15	16
Non-laboring class	58.79	61.11	63.47	66.40
Artisan class	55.93	57.76	60.58	62.93
	2.86	3.35	2.89	3.47

WEIGHT (POUNDS).

Age	13	14	15	16
Non-laboring class	88.60	99.21	110.42	128.34
Artisan class	78.27	84.61	96.79	108.70
	10.33	14.60	13.63	19.64

CHEST GIRTH (INCHES).

Age	13	14	15	16
Non-laboring class	28.41	29.65	30.72	33.08
Artisan class	25.24	26.28	27.51	28.97
	3.17	3.37	3.21	4.11

And among artisans the people of the cotton mills stand lowest in the physical scale.

Commenting on these figures, Dr. W. W. Keen of Philadelphia says:

"Constant standing and superintending a loom, or other similar work requiring constant standing, itself stunts the growth of children at these plastic ages. The ages in question, thirteen to sixteen years, are precisely the ages when,

under favorable circumstances, these children develop physically with great rapidity. This is especially true of girls. To confine these children in mills, with lack of opportunity for schooling, is to prevent both the physical and mental development of such children to a degree which is most injurious, not only to them, but also to the community—that is to say, the State.

"In my clinics for the past forty years I have had many hundreds of such children, under-developed in mind and body, ill-fitted to enjoy life themselves or to transmit vigorous minds and healthy bodies to their children."

The same process which Mr. Chamberlain is trying to counteract in England by a protective tax on the products of the farm, thus sending the people back to the country from the overcrowded factory districts, is being repeated on a tremendous scale in the South and in North Carolina. From one little village called Clyde's, near Waynesville, during the past year, fifteen hundred of our splendidly developed mountain people have gone in the past year to the cotton mills of South Carolina. They are being tempted from the farm by the prospect of getting wages from every member of the family from eight or ten years up. There is just now unprecedented demand in the factories for labor, and the demand is being met by the employment of children on a larger scale than ever before. It is a conservative estimate to say that there are fifteen thousand children under fourteen working in the cotton mills of North Carolina twelve hours a day or night, and the greater part of these are girls, the future mothers of the race. "It is a shame for a nation to make its young girls weary."

Is it not time for such protest to be made by the physicians of North Carolina against the extension of this evil as was made by the physicians of old England more than a hundred years ago? The science of medicine has advanced almost infinitely since that day. But the fundamental facts regarding childhood and its rights remain unchanged with the centuries.

The Responsibilities of Railway Surgery.

BY CHARLES A. JULIAN. B S , M D., THOMASVILLE, N. C.

Whatever field of medicine or surgery may be under systematic exposition, its study is much clearer by determining the nature of its true logical intent. In my opinion there is no department of surgery which calls for a better conception, a readier knowledge, a cooler head, a quicker decision, or a steadier hand than does that of railway surgery —nor is there a department that is called upon in greater emergencies. Here is seen the unfortunate victim of accident; here are heard the agonizing cries of pain. There is no scene that calls forth greater sympathy than that of a fated humn being—crushed, bleeding and mangled under merciless wheels. The surgeon, under such circumstances, is in a position peculiar to itself and while the cries of distress and the sight of suffering bring forth a tender sympathy, yet none of these should arrest his duties and responsibilities to his profession, his people and his company. Railway surgery is yet in its infancy, and its importance is not fully appreciated. The field, to a great extent, has been neglected, and the subjects which come within its province have not been developed, nor their high mission yet fully grasped.

There are various forms of service which may be remedied by the railway surgeon outside of pure surgery. It is not all in the coveted pass, or the dash of the brilliant operation; there is a wider field of usefulness. The railway surgeon must not only be qualified to take charge of accidental injuries, but he must appreciate the value of physical examination of employes and the appropriate hygienic conditions which protect the health and contribute to the safety of the multitude who travel. There are many difficult problems to solve, involving the comforts of man, the intelligent, proper and prompt service for the company and the protectin of health and human life.

THE FIRST DRESSING.

Too much importance cannot be attached to the first dressing. The day of controversy as to the benefits of antisepsis is past and the surgical world is of one opinion as to the true value of cleanliness. The entire subsequent history of every case of injury is controlled by the first dressing. The surgical infections which, twenty-five years ago, were the dread of all operators, have disappeared, and it has been amply demonstrated that it is very much better to exclude germs than to permit of their access and then endeavor to destroy them after they have been implanted. The principal aim underlying the resort to antiseptic methods is to prevent infection, with its associated symptoms of pain, fever and pus formation, which tends to prolong the period of repair and end with death. Even at this age, at this era of enlightenment, the laity do not appreciate the difference between clean and unclean surgery, but with what impunity can we now perform operations, which, in the preantiseptic era, were regarded as absolutely unjustifiable and dangerous. It is important that nothing but clean hands and dressings should touch the wound, and upon that as much as upon skillful operation depends the result. The establishment of the germ theory and the introduction of germicidal agents, naturally, have wrought wonderful changes in our technics. In emergency cases, however, particularly in localities where there are no hospitals, we are called upon to operate under the most disadvantageous circumstances. These injuries are very likely to be contaminated from the beginning, and the strong element of safety is thorough antiseptics. No amount of pain and discomfort, no amount of pleading on the part of patient or friends should make us swerve from duty in the proper efficient preparation of the injury for operative procedure.

Thorough preliminary disinfection is the vital part of aseptic technic. Prevent infection if possible and prevent its extension in those wounds already infected.

CONSERVATISM.

Every case is a law unto itself, and there cannot be any fixed rule prescribed as to exact methods to be followed in railroad injuries. We must be governed, of course, by attending circumstances and by our convictions. Our duty is to accomplish results which will be of the greatest possible benefit to the patient. We should weigh well the consequences of every injury; we can not be too careful. Injuries from what at first may seem to be irreparable may recover, especially those of the extremities, and I believe in waiting and allowing plenty of time to elapse before heroic measures are undertaken. As a rule we have to do with that class who are entirely dependent upon their hands for their sustenance, and the injured member should be restored to a normal condition, or as nearly as possible, thereby saving many from being lifelong cripples, and in addition to this the saving of the vast sums to the corporations.

Limbs saved, though shortened and deformed, are of far better service than those artificially made, and though it may take days of waiting and hours of patient suffering, it will fully repay the time and trouble. The duties and responsibilities devolving upon the surgeon demand that he meet the emergencies of every situation, and there is no doubt that much greater judgment and forethought are required to practice a wise conservatism than are necessary in radical operations, though it is easier oftentimes to do a hasty operation, but the case of performance must not let us forget the injustice to the patient and all concerned. In cases of injuries to passengers, conservatism accomplishes much more in allaying the feeling of bitterness toward the road on their part and in diminishing legal complications connected with such cases.

FIRST AID.

Much has been written concerning the importance of first aid, and many and various complicated schemes have been advanced, all of them advocating needful measures, but it

could be made very simple and extremely beneficial if proper instructions were imparted to railroad employees, and it should be made its business to instruct the employees in first aid. Classes should be formed at stated intervals and taught what to do in accidents. Medical boxes containing sensible and aseptic material for making first aid and dressing should be placed in every car. These boxes should be wisely distributed, and the employees instructed in an intelligent use of them.

CAR SANITATION.

This is a very important problem, and there should be a better comprehension of the value of appropriate hygiene and the part it plays in the prevention of disease. It is the duty of the railway surgeon not only to take charge of accidental injuries, but to protect the health of the company's employees as well as those who travel on its lines.

The public is becoming better educated in the principles of hygiene and sanitation, and the more they know concerning these matters the more they demand. The dangers from unsanitary conditions, however, are not due alone to carelessness on the part of the railroads, but frequently from those who are ignorant of the ordinary rules of sanitation, who live in dirt and filth and leave behind them the germs of disease. The clean and filthy, the healthy and the sick, the rich and the poor, all classes are brought together in direct contact, producing germ-laden air, which breeds disease. The idea, as stated before, is not to be qualified only to take charge of injuries, but to prevent disease, to lay down rules for the good of all, to encourage proper ventilation, to instruct in the proper disinfection of coaches and stations, to inspect the heating and water supply, and to instruct in regard to sleeping car furnishings and bedding, and above all to encourage laws against the production of filth and the intolerable habit of careless spitting. This, it would seem, would constitute a long list of duties, but the principles of

hygiene and sanitation are very easy to learn and proper instruction could be given to those whose duty it would be to carry out this great problem.

MENTAL AND PHYSICAL FITNESS OF RAILWAY EMPLOYEES.

The very best men, mentally and physically, should be employed in railway service, men whose minds are healthy and well balanced, who have normal brains, free from disease. They should be men free of degrading habits, free from the addiction of drugs, whiskey and cigarettes, and free from all those habits capable of destroying the activity of the mind and body, and this calls for the thorough physical examination of the employees and those applying for positions as employees. I consider this the railway surgeon's paramount duty.

The Duodenal Ulcer, by One of its Victims.

BY FREDERICK K. COOKE, M.D., DURHAM, N. C.

Boas has said, and correctly so, that of all ulcerative processes of the gastro-intestinal tract the duodenal ulcer demands the most careful consideration, because of its anatomical position, obscure symptomatology and diagnostic signs, and the serious complications which may develop during its course.

Unfortunately, the great majority of writers have spoken too freely on the extreme rarity of this disease, especially in our country, consequently it has not received the consideration it justly deserves. This fact was brought home to me last August. While I freely admit that it is by no means a frequent disease, still there can be no doubt, as I hope to prove, that it is not as infrequent as is generally supposed. Moynhan[1] reports 51 cases with operation occurring within his own practice from January, 1900, to September, 1904. Of those there were seven perforations (with 2 deaths), 22 associated with gastric ulcer (with 1 death), 23 with duodenal ulcer alone (with 1 death). Mayo[2] reports about the same number of cases.

What do these figures go to prove? First, that the relative frequency of duodenal to gastric ulcers is much greater than text-books and other statistics show; and second, that the association of the two is quite frequent.

Site.—It is usually confined to the first or oblique portion of the duodenum, seldom to the perpendicular or descending, very rarely in the transverse. In Collin's[3] 262 collected cases, perforation occurred within two inches of the pylorus 242 times, 14 times in the descending portion, and 6 times in the transverse. Perry and Shaw[4] found that in 141 cases it occurred 123 times in the first, 16 times in the second, and 2 times in the third. In Schwartz's[5] case the perforation was just below or on a level with the ampulla of Vater. In

Moynihan's 51 cases, all the perforations[7], and 43 of the chronic cases were in the first portion, only 1 being in the second. From these figures and others we may safely say that ulcers in the first portion of the duodenum are ten times more frequent than in the second.

Number.—Usually solitary, but may be multiple. In one of Moynihan's recent cases, where perforation had taken place on the anterior wall, immediately opposed to it on the posterior was another similar in size and shape. Moynihan was also the first to call attention to the association of duodenal and gastric ulcers, in his paper before the Clinical Society of London, in 1902. In his series of 44 cases, 22 were associated with gastric ulcer (50 per cent); Mayo's per cent is a little higher. This he attributes to the excess of HCl accompanying gastric ulcer. However, Howard[6] states that in 82 consecutive cases of gastric and duodenal ulcers occurring at the Johns Hopkins Hospital, hyperchlorhydria was present in only 26.4 per cent. This is quite contrary to the statements of Mayo, Riegel and others. Mayo, in a recent paper, says, "two facts are prominent (1) that 75 per cent of the gastric ulcers lie in the grinding apparatus of the pyloric end, and (2) that sometimes in the history of the ulcer, and in the majority of cases at all times, there is a relative increase in the secretion of hydrochloric acid, and, whether cause or effect, this effect is a most important etiological factor."

To recent surgery upon the stomach and gall-bladder must be given the credit of establishing the important point that gastric ulcers are not always solitary—quite the reverse of what the various text-books claim—and that duodenal are associated with gastric ulcers in about one-half of all cases.

Location of the Ulcer.—By far the most frequent seat is on the upper portion of the anterior wall. Oppenheimer[7] cites 15 cases of perforation, 11 of which occurred on the wall, 3 on the posterior, and 1 on the superior. In Collins's 119 cases of perforation in the first portion, 68 were on the anterior wall, 39 on the posterior, 10 on the superior, and 1

on the inferior. In 8 perforations of the second portion, 5 were on the internal wall, 2 on the posterior, and 1 on the external. The position of the ulcer is of great surgical importance. The anterior perforations are not so likely to be walled off, therefore the intestinal contents escaping into the general peritoneal cavity produces a rapid general peritonitis.

Etiology.—In my previous remarks I have not attempted to offer anything new, but rather to sum up the results of the most recent investigations, both in this country and abroad. I shall now present my own theory in regard to the etiology of the duodenal ulcer and its relation to the gastric.

Sex.—It is much more frequent in males, the ratio being 4 to 1 (Osler), 5 to 1 (Mayo), 6 to 1 (Weir), 5 to 1 (Collins), 6 to 1 (Perry and Shaw), 2.5 to 1 Mayo and Graham), whereas Moynihan's was much less. In his 51 cases there were 32 males and 19 females. If statistics from the various hospitals be true in regard to the greater frequency of gastric ulcer in women, the above figures are interesting, especially when we recall the fact that the pathogenesis of the duodenal and gastric ulcer is said by the most eminent authorities to be identical.

Age.—Duodenal ulcer may occur at any age, even in infancy. T. D. Lister and Spiegelberg have each observed a duodenal ulcer in an infant three days old. Chvostek, in 87 postmortem examinations in children under ten years of age, found duodenal ulcer in 5. Oppenheimer has reported 15 cases of melena neonatorum. Similar cases have been reported by Henoch, Zerschwitz, and Dusser. Collin's table of 297 cases is the most complete.

Under 10 years of age	42 cases
Between 10 and 20 years	24 cases
Between 30 and 40 years	52 cases
Between 40 and 50 years	46 cases
Between 50 and 60 years	41 cases
Between 60 and 80 years	28 cases
Between 80 and 95 years	3 cases

Race.—I could find no figures on this point.

Nationality.—It is certainly more frequent in Germany and England than in America. In the United States it is much rarer in the South than in the New England States and California.

Occupation.—Occupation plays an unimportant role. However, it might be well to say that an indoor life predisposes to ulcer more than an outdoor life.

Family History.—Heredity, so far as I have been able to see, plays little or no part. In the majority of cases there was no history of stomach trouble.

Personal History—Previous Stomach Trouble.—Unfortunately the statistics are not satisfactory, but we may feel safe in saying that a large per cent of all cases have had, previous to the symptoms of ulcer, some disturbance of digestion, as discomfort after meals, sour eructation, and pyrosis.

Disease of the Heart and Blood-Vessels.—It is possible for arteriosclerosis to play some part. It predisposes to thrombosis. By palpation of the peripheral vessels clinically, and noting the macroscopic changes at post-mortems, it was seen to be present in 48.8 per cent of the series of gastric and duodenal ulcers occurring at the Johns Hopkins Hospital; to a very marked degree in 22 per cent.

Endocarditis.—This also deserves some consideration, as it may give rise to embolism.

Bright's Disease.—This is considered by many as an important etiological factor. The supporters of this theory claim that the necrotizing effect of urea, or its derivative, ammonium carbonate, may manifest itself in the first portion of the duodenum, as well as in the lower portion of the bowel.

Chlorosis.—Is a most important factor in gastric ulcer, particularly in young girls. It was present in a marked degree before the ulcers developed in 73 per cent of Fenwick's

cases. Osler says that "anemia and chlorosis predispose strongly to gastric ulcer, particularly in women, and in association with menstrual disorders."

Syphilis.—It might be well also to mention syphilis. There is a possibility of a specific endarteritis.

Burns.—The most generally accepted factor in the production of duodenal ulcers is external burns. Holmes, in 125 cases of external burns, reports 16 cases; Perry and Shaw, in 149 cases, found 5 duodenal ulcers; and Collins attributes 38 of his 297 cases to the same cause. The time of the appearance after the burn is from one day (Curling) to one or two weeks (Holmes.)

Hunter's theory falls short in making clear the relation between cutaneous burns and duodenal ulcers. He injected toluylenediamin into animals, and this so changed the composition of the bile that ulcers were formed in the duodenum. He argued that, in some way, changes in the skin, due to the inflammation, produced the same changes in the bile as did the toluylenediamin. In his experiments, however, the ulcers were below the entrance of the bile duct—just the reverse of what is usually the case of burns.

The most recent literature on the subject says the ulcer is due to a septic infarct. Lockwood's experience seems to give some weight to the above argument, since in his 138 cases of burns treated with all possible antiseptic precautions, there occurred only one ulcer. But let me ask this question: Why should an infarct be formed only in the duodenum? Why are other organs not affected? Are there any local peculiarities of circulation in the duodenum, particularly in the first portion? To me the above theory is a poor one, and absolutely without any foundation.

It is a well-established fact, by the modern theories of immunity, that intestinal parasites are protected from the digestive ferments in which they live by antidigestive ferments found in their skin. It has also been proven that the alimentary walls are able to protect their tissues from self-

digestion (autolysis) by certain antibodies contained in their epithelial cells. Any diminution of these bodies may, and a marked diminution does, result in autolysis, or self-digestion. Now, here is the point I wish to make. It is conceivable that in external burns toxic substances are absorbed, and are specific and destructive to the antibody in the epithelial cells of the duodenum. As soon as the antibodies are diminished to a sufficient quantity, an ulcer is the result.

Naturally the question of Lockwood's cases arises. Why was it that there was only one ulcer when antiseptic precautions were taken? This does not in the least shake my belief in the theory I have advanced. The toxin due to the sepis probably combines with the other toxin, and may assist or even be necessary to bring about a reduction of the antibodies in the epithelial cell of the duodenum—the association of toxins.

Among the predisposing causes, the corrosive action of the hydrochloride acid is one of the most important. Ewald succeeded in producing duodenal ulcers in animals by introducing hydrochloric acid into the stomach. Von Mering and Moritz have also proven by experiments that the stomach promptly and copiously expels water into the intestine when an irritant such as alcohol is introduced, thereby protecting itself from injury by concentrated solutions or irritants. It remains yet to be proven that the duodenum possesses such a property.

Any disproportion between the composition of the blood and gastric juice may give rise to ulcer, either in the stomach or duodenum. How does it do this? By diminishing the antibodies in the epithelial cells. The disproportion may be due to two causes, viz., anomalies in the composition of the blood, as chlorosis, anemia, suppression of menses, etc., or an increase of secretion of the gastric juice, particularly the hydrochloric acid. In case of the former it is a matter of lowered resistance; in the latter, an increased virulence.

This explains the greater frequency of gastric ulcers in women, and duodenal in men. It also accounts for the fact

that gastric ulcer, which is more common in the female, is usually not associated with hyperchlorhydria, whereas in the male the reverse is the case.

Symptoms and Diagnosis.—The most remarkable fact is that a duodenal ulcer may give rise to no symptoms until perforation takes place. Such a latent course is by far more frequent than in gastric ulcer.

Subjective.—Pain may be slight, producing only a feeling of uneasiness in the epigastrium. Again, it is intense, of a burning, gnawing, boring character, which may radiate downward, toward the sides, or upward toward the right shoulder. This was true in my own case. When severe, it was almost always a little to the right of the middle line, about on the level with a prolongation of the parasternal line, two centimeters below the gall-bladder.

I agree with Moynihan and others that the time of the onset of pain after food affords valuable information in our diagnosis. If pain does not make its appearance until several hours after a meal, the ulcer is either at the pylorus or very near it. The pain, too, is always relieved by the presence of food in the stomach—a glass of milk, or, better still, a boiled egg. The food relieves the pain either by reflexly closing the pylorus, thereby preventing the escape of the stomach contents, or by diluting the hydrochloric acid which is present in an excessive amount.

Frequently it is associated with a gastric ulcer, in which case the diagnosis is more difficult. Here we would have pain coming on shortly after food is taken, which gradually becomes easier, to return the second time with greater severity.

Objective.—The typical point of tenderness should be along a continuation of the parasternal line, coinciding with the area of pain, about two centimeters below the gall-bladder. In my own case this was not noticeable all the time. Vomiting may or may not be present. It is of purely a reflex nature and occurs only when the pain is very severe (about

17 per cent.) However, it is of great diagnostic value when coming on hours after meals with bile and blood. Jaundice is rare, but may be present. Hemorrhage, according to Weir, occurs in one-third of all non-perforating ulcers. Oppenheimer found it in 50 per cent of his. Others place the figures even higher. It may be very small, or so profuse as to produce death from shock or collapse. If in a sufficient quantity, the stools have a tarry color. The hemorrhage, however, may sometimes be fresh, and, if associated with hemorrhoids, misleading. The amount is usually much more profuse than in gastric hemorrhage on account of the large size of the vessels encountering in this region.

Prognosis.—In Collin's 262 cases perforation occurred 181 times (69 per cent). However, this seems to be too high. Of these 181 perforations, there were 125 cases of general peritonitis, all of which resulted fatally. In Moynihan's 51 cases, you remember, there were only seven perforations with two deaths. Frequently, adhesions take place between the duodenal wall and adjacent viscera, viz., the liver, pancreas, etc. Then, too, the ulceration may extend into the aorta, superior mesenteric vein, hepatic artery, and portal vein. If the perforation is on the posterior wall which, fortunately, was true in my own case, the intestinal contents may escape into the lesser peritoneal cavity, producing a subphrenic abscess. However, such is not the usual occurrence. The perforation in the vast majority of cases is through the anterior wall into the general peritoneal cavity, producing all the symptoms of shock and collapse, followed by a fatal peritonitis.

Treatment.—Absolute rest in bed; restricted diet; alkalies to counteract the acidity of the gastric juice. If there is not immediate improvement, or if there is any hemorrhage while under proper treatment, I should say the case becomes a surgical one. In the hands of a competent surgeon, gastro-enterostomy is by far the safest plan.

If my theory is right, it is only a question of time when the work which is now being done on immunity will take all these cases from the surgeon's knife.

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Gall-Stones, with Report of Cases.

BY J. W. LONG, M.D., GREENSBORO, N. C.

The upper right quadrant of the abdomen is attracting more attention to-day from surgeons than perhaps any other portion of the human body. In this quadrant there are three structures intimately connected, all of which can be covered by the palm of the hand, and which are so often diseased, and are productive of so much suffering, impairment of health and destruction of life that any serious symptoms pointing to that region always suggests to the surgical mind that either the gall-bladder, with its ducts, the duodenum, or the pyloric end of the stomach is in trouble.

Diseases of the vermiform appendix and their treatment have been studied almost to a finish by those who have kept abreast with modern surgical teachings; but the study of diseases of the organs in the upper right quadrant is still in its infancy, although many important discoveries have been made, and some facts indisputably settled.

This paper is confined to a review of some practical points regarding surgery of the gall-bladder and its ducts, enforced by a report of some striking cases.

The evolution of gall-bladder surgery is exceedingly interesting, but we will not attempt to go into details of this phase of the subject further than to say practically every important step has been learned since the writer of this paper began the study of medicine, therefore, it goes without saying that we are not studying ancient history, but modern surgical science.

Since only practical questions will be discussed in this paper, many points interesting to those who love science for science's sake will be omitted.

Frequency.—Like the knowledge of wide dissemination of tuberculosis, appendicitis and hook worm disease, a mere statement of the prevalence of gall-stones is startling, and

since it is known that gall-stones are subject to long periods of quiescence, not to speak of their insidious formation, it makes one feel a twinge of uneasiness for fear that he may awake some morning with a pain under the point of his right ninth rib.

Gall-stones are said by Moynihan to be present in 10 per cent of all bodies examined post-mortem, and Naunyn says that every fourth elderly woman has gall-stones. Moynihan says further that probably nine persons out of ten, who have gall-stones are never conscious of the fact. Indeed they may be passed through the bowel without ever having caused any symptoms. Even early infancy is not free from gall-stones, since it has been shown that jaundice occurring immediately after birth may be due to their presence.

Etiology.—The causes producing gall-stones have been carefully studied, but probably not yet thoroughly understood. However, there are two or three conditions, which have been shown must be present before we can have formation of gall-stones.

In the first place, it must be remembered that gall-stones consist chiefly of cholesterin and bilirubin-calcium. Budd, as far back as 1845, was the first to suggest that the cholesterin of gall-stone came from the mucosa of the gall-bladder. Bristowe, in 1887, advanced the same view, and Naunyn, in 1892, strongly advocated this theory. It seems now to be definitely settled that both of these substances are excreted by the bladder mucosa. It follows then that the gall-bladder is the factory where gall-stones are made. Even stones that are found "up-stream" in the hepatic ducts are probably formed in the gall-bladder and migrated thence. While this is the rule it must be admitted that it is possible for stones to form primarily in the intra-hepatic ducts.

But there must be other factors than the mere presence of cholesterin and bilirubin-calcium, since these are the natural constituents of bile, therefore, always present, and it is only when they are present in excess, just as when we put too much

sugar in our coffee, are they precipitated, and form gall-stones.

The one thing necessary in the production of excessive outpour of gall-stone constituents in inflammation of the gall-bladder, and Meckel calls this "lithogenous catarrh."

As long ago as 1554 Ferneilus pointed out that there must always be stasis in the bile current before there is a formation of gall-stones. This astute observation has been borne out by recent experiments, since it has been found that to produce lithogenous catarrh, there must first be an obstruction to the flow of bile, as the economy of the bile system is such that the physiological drainage readily empties the bladder ducts, even though there be irritants or infectious agents in the bile. Miyake and others, in experimenting with the colon bacillus, found that to produce gall-stones there must be an impediment to the flow of bile through the cystic duct. Mignot has shown that even the presence of foreign bodies in the gall-bladder for many months will not cause gall-stones unless there is some impediment in the flow of bile or infection be present.

This brings us to a consideration of the part which bacteria may play in the formation of gall-stones. In order to economize time it may be stated briefly that normal bile is free from bacteria, but it is not an antiseptic as was formerly supposed, since it is a very good medium for the culture of germs. In health, the bile passages are usually free from germs. Sherrington showed in 1898 that the lower end of the common duct contains no bacteria, as a rule, unless there be some impediment to the regular outspurts of bile, but the moment there is an obstruction there is an instant invasion of colon bacilli. Now, there are only two ways in which germs can find access to the gall-bladder; first, along the common duct, and second, through the blood supply.

Welch, in 1890, found colon bacillus and staphylococcus pyogenes in gall-stones. In 1896 Hanot and Milam found

typhoid bacillus in gall-stones. Italia summarizes our knowledge on this subject as follows:

First: The bacillus and coli and bacillus typhosus are the specific organisms in the formation of cholesterin calculi.

Second: The streptococcus pyogenes and the staphylococcus pyogenes aureus are rarely the causes of gall-stone formation. When they are, the stones consist solely of calcium salts.

Third: If the bacillus coli and the streptococcus or staphyloccoccus are present the stone is of mixed formation.

Fourth: The bacillus substilis grows well in bile but does not alter it in any way.

Hester says there is no evidence of the formation of gall-stones without the presence of bacteria. While this probably is true, yet it must be remembered that gall-stones are sometimes found in new born infants, which have been, of course, free from bacteria of any kind. Another curious fact in this connection is that a virulent infection of the gall-bladder will not cause the formation of stones. This seems to be due to the intensity of the resulting inflammation producing a sediment mixed with pus which has no tendency to cohere or to adhere to foreign bodies.

In this present state of our knowledge touching the formation of gall-stones we may accept the following summary until more light is shed upon the subject:

First: Bile stasis.

Second: Infectious bacteria.

Third: Lithogenous catarrh.

Symptoms.—The symptoms of gall-stones may be tersely described. They are pain, tenderness, colic, nausea, vomiting, jaundice, fever, tumor and those of pertionitis.

Pain.—Pain must be distinguished from colic. It is of two kinds fixed, deep-seated, boring pain and referred pain. The former is confined to the gall-bladder region and can usually be located by the patient. Referred pain is, in seven

cases out of ten, according to Murphy, felt under the right scapular. At times it may be in the left shoulder or right arm.

Tenderness.—Tenderness as elicitated by palpation is not quite identical with pain, yet is closely associated with it. The principal point of tenderness is immediately over the gall-bladder at the tip of the ninth rib, and is best elicitated by Moynihan's method, which consists in placing the hand over the liver with the thumb under the edge of the ribs and encourage the patient to take a full breath. The descent of the diaphragm forces the tender gall-bladder against the thumb. It must be noted that in extreme enteroptosis the liver and gall-bladder are much below the edge of the ribs, in this case the edge of the liver must be sought. A second point of tenderness is behind the right side on a level with the twelfth thoracic vertebra, two to four fingers breadth from the spine. Boas lays much stress upon this symptom. One important feature of Boas' symptom is that when present during an acute attack, it is also invariably present during the intervals; that is, if once present, always present.

Colic.—Colic is probably due to the effort of the gall-bladder and ducts to propel the stones through the ducts. The exact factors producing colic are unsettled, but when present there is no doubt in the patient's mind about the colic being of a very terrifying nature. The colic is often aroused by a full meal, unusual exertion, or many times without apparent cause. One of my patients had her first attack of colic immediately after a fall from the top of a load of hay. These attacks often come on with the semblance of regularity. Another patient had an attack almost invariably on Sunday and Tuesday nights. The colic usually lasts until the patient vomits or is relieved by an opiate.

Nausea and Vomiting.—Disturbed digestion so often accompanies gall-stones that Moynihan has said, "If one wished to frame an epigram it could be said with truth, that 'the most common symptom of gall-stones is indigestion.'" In-

deed, I have come to regard persistent indigestion with occasion attacks of nausea and vomiting as being strongly suggestive of the presence of gall-stones.

Jaundice.—Jaundice is a misleading symptom since its absence is so often counted against the presence of gall-stones. The truth is that jaundice is never present except when there is an obstruction in the common and hepatic ducts and usually this obstruction is a stone. One of my cases was slightly jaundiced from the impaction of a large stone in the cystic duct and pressing upon the common duct. Murphy states that in his experience that only 14 per cent of his patients had jaundice. Persistent unremitting jaundice suggests malignant disease.

Fever.—Fever accompanying gall-stones depends always upon infection of the gall-bladder or ducts and varies from normal to 105. The peculiarity of gall-stone fever is the sharp rise of temperature which lasts only a few hours and drops suddenly back to normal. It is often spoken of as "a steeple temperature." One of my patients in this town would have at irregular intervals a chill, accompanied by a terrible colic and followed by a sudden rise of temperature to 105 degrees. A dose of morphine would relieve the pain and in a few hours the temperature would be normal. I found, at operation, a suppurating cholangitis with 39 stones in the gall-bladder and one in the common duct.

Tumor.—A tumor is rarely present except when the cystis duct is blocked usually by a stone. It may also occur when the common duct is obstructed.

Peritonitis.—Localized peritonitis is often a symptom of gall-stones, and it is not unusual to find in neglected cases a wide spread peritonitis starting from an infected or ruptured gall-bladder. I have seen at least two cases of this kind die without operation.

Surgical Treatment.—There is no other treatment for gall-stones. I shall discuss only three procedures since one

or more of these procedures are indicated in the vast majority of cases.

Cholecystostomy.

Cholecystectomy.

Choledochotomy.

Cholecystostomy.—Cholecystostomy consists in opening the gall-bladder and fastening it to the abdominal wall. It will ever remain to the glory of American surgery that Bobbs in 1867 performed the first cholecystostomy in one stage. However, Bobbs operated under a mistaken diagnosis, but his operation was quickly followed by others. In 1882, Konig did the first successful cholecystostomy in two stages. This operation has been largely supplanted by that of cholecystectomy, but while the latter is the ideal operation since it removes the organ which manufactures the stones, yet there are many patients who would probably die if a cholecystectomy were undertaken that might be saved by doing a rapid cholecystostomy. Several such cases have been under my care. Moynihan wisely observes that the surgeon's own experience is his best guide, and he should do that operation which will give his patient the best chance for his life.

Cholecystectomy.—Cholecystectomy is the operation of choice when the stones are confined to the bladder and cystic duct, and the common and hepatic ducts are patulous. This operation was done in 1883 by Langenbuck. It is not a difficult operation except where many dense adhesions are present, and even here, if the patient can stand it, perseverance and skill will overcome the adhesions. Indeed, I think it may safely be stated that any competent surgeon can always do a cholecystectomy, provided, his patient is in condition to bear the operation.

Choledochotomy.—Courvoisier perhaps, did the first successful choledochotomy, which consists in opening the common duct. To McBurney belongs the credit of doing the first duodeno-choledochotomy.

There are a number of other operations for the relief of gall-stone diseases that are of great value, but those just

mentioned are those mostly used, and as this is intended to be a practical paper we will discuss no others.

A brief report of the gall-stone cases I have done is appended. All of them but one was done at the Greensboro Hospital, and all but one within the last six months.

CASE 1.—*Forty gall-stones, one in common duct, cholecystitis. Operation; cholecystectomy, choledochotomy. Recovery.*

MRS. B.—Age, 38; married; mother of six children; suffered from cholecystitis eighteen years ago. At that time the gall-bladder was enlarged, easily palpated and tender; after ten days these symptoms gradually subsided and the patient had no further trouble with her gall-bladder until the early part of 1903, when she began to suffer with attacks of colic. These occurred at irregular intervals and with increasing severity. After a few months the attacks were accompanied by symptoms of sepsis. The patient would be seized with a chill accompanied by intense pain in the gall-bladder region, followed by a quick rise of temperature of 103 to 105 degrees. After a few hours the temperature would subside and the patient would be out of bed in a short while. These attacks were always followed by jaundice. The patient became very much emaciated and cholaemic. At operation, which was done September 9th, 1903, the gall-bladder was found thickened and septic. It was removed and further search revealed a stone in the common duct. This was stripped back to the opening of the cystic duct stump and removed. The patient made an uneventful recovery and has been in perfect health ever since.

CASE II.—*Four large stones, three in common duct. Operation; cholecystostomy, choledochotomy. Recovery.*

MRS. T.—Age, 42; wife of a prominent physician in another town; had been suffering from gall-stones for ten years. She was also a great sufferer from asthma. When first seen by the writer she had just had a severe attack of gall-stone colic and her skin was of a dirty, lemon color. After a few weeks she entered the Greensboro Hospital, and

was operated on November 10th, 1904. Many adhesions were found, showing evidence of repeated attacks of localized peritonitis. The gall-bladder was shrunken and denselt adherent to the common duct. Large stones could be found in both structures. On opening the gall-bladder, a faceted stone half an inch square was found and removed. In the side of the gall-bladder was an opening leading into a similar opening in the side of the common duct through which three other stones had escaped and were packed in the common duct. In other words, these stones had become restless at the long delayed coming of the surgeon, and being unable to force themselves through the cystic duct had ulcerated their way through the side of the bladder into the common duct and were heading for the alimentary canal. This is one of the very rare instances in which gall-stones have escaped through the bladder by this route. During the operation my anesthetizer, Dr. J. T. J. Battle, than whom there is none better, warned me repeatedly that the patient was pulseless. She remained so for an hour and only under the most active stimulation did the radial pulse return. Because of her extreme condition the gall-bladder was not removed, but drainage, both inside and outside the bladder was established, and the patient hurried to bed. She made a very rapid recovery.

Case III.—*Gangrene of the gall-bladder; one large stone; cholecystostomy. Recovery.*

Miss C.—Age, 38; a saleswoman travelling from St. Louis; was seized while in the city of High Point with an intensely agonizing pain in the upper right quadrant of the abdomen. She was brought to the Greensboro Hospital on a cot, and her condition was so extreme that she was operated on late one evening, since we felt that it was unsafe to wait till morning. At the time she was seen by the writer she referred most of her pain and tenderness to a point midway between the ninth rib and the crest of the ilieum. Many adhesions between the gall-bladder, bowels and omentum were found. The gall-bladder was very dark and distended and al-

most pulpy in consistence, containing about a pint of dark, bloody looking fluid, and a large stone was found packed in the opening of the cystic duct. This stone proved to be of the bilirubin-calcium variety. Cholecystectomy is the ideal operation in gangrene of the gall-bladder, but this patient's condition was so bad that we felt it unsafe to do more than a cholecystostomy with ample drainage around as well as within the gall-bladder. The patient made a good recovery.

Case IV.—*Large stone in bladder and one in common duct; cholecstitis; marked cholaemia; jaundice. Cholecystostomy, choledochotomy. Recovery.*

Mrs. M. G. C.—Age, 56; married; mother of four children; gives a history of falling from a load of hay when a girl, and being at once seized with colic in the gall-bladder region. She has had colic at varying intervals ever since. For a number of months past she has suffered with colic, pain, fever, jaundice, etc. She was first seen by the writer in December, 1902. At this time her condition was very bad. Cholaemia, jaundice, emaciation and prostration were prominent features of her case. A hurried cholecystostomy was done, removing a large gall-stone and several ounces of pus from the gall-bladder. This patient made a rather slow recovery, but the cholaema and jaundice entirely disappeared, and the patient became fat and strong, sufficiently so to do her cooking and house-keeping. The biliary fistula continued to discharge large quantities of bile. Under the advice of the writer she entered the Greensboro Hospital January 17th, 1905, and the next day was operated on to overcome the evident obstruction in the common duct, which it was believed caused the continued flow of bile from the fistula. A faceted stone was discovered in the common duct and removed through an incision. The incision was closed by sutures, drainage was established and the patient made an ecellent recovery. The old biliary fistula closed and the stools showed evidence of bile.

Case V.—*Fourteen gall-stones in bladder; no symptoms except colic; appendicitis. Cholecystectomy; appendectomy. Recovery.*

Miss A.—Age, 26; single; referred by Drs. Jones and Strudwick of Hillsboro. The patient complained of pain and colic, which recurred at fairly regular intervals each week, and had done so since last July. The attacks came on almost invariably on Sunday and Tuesday nights, and frequently on other nights during the week. She found relief only in taking morphine, and often it took more than a grain to relieve her. She had no fever, jaundice, no tumor, no nausea, no vomiting or tenderness, simply these recurring attacks of colic. February 15th I operated on her at the Greensboro Hospital, removing her gall-bladder containing 14 faceted stones. The common duct was clear and the gall-bladder contained no fluid. The cystic duct was ligated and the stump covered with peritoneum. Through the same incision the inflamed appendix was removed. Gauze drainage from the stump of the cystic duct was employed. The patient made a good recovery.

Case VI.—*Three large stones in bladder, cholecystitis, slight jaundice from pressure. Cholecystostomy. Recovery.*

Mrs. R.—Age, 48; was referred to me by Dr. C. S. Gilmer. The patient was married and the mother of numerous children. About eighteen months ago she had a fairly severe attack of what must have been gall-stone colic. Since the latter part of January she had suffered most of the time with intense pain and tenderness in the gall-bladder region. I saw her in one of these attacks and her suffering was terrific. March 18th I did a cholecystostomy, removing three large stones, two of which were impacted in the cystic duct and the other in the pelvis of the gall-bladder. The patient made a perfect and quick recovery.

Case.—*Three large stones impacted in the cystic duct; gall-bladder infected and distended; peritonitis. Cholecystostomy. Death.*

Mrs. P.—Was referred to me by my friend, Dr. D. A. Stanton, of High Point. The patient was 56 years old, and the mother of a large family of children. Twenty years

previously she had been in the Jefferson Hospital and was tapped for asitis. A violent peritonitis followed and her life was despaired of, but she gradually recovered. When consulted by the writer she had suffered for many years with her right side, and for eight weeks she had been in bed with peritonitis and every symptom of gall-stones. She had an organic heart lesion and was considered a very poor subject for operation, but her suffering was so great and her demand for relief so urgent that an operation was done on April 8th. On opening the abdomen so many adhesions were found that it was necessary to literally dig one's way to the gall-bladder, which was distended with a pint or more of fluid. The gall-bladder was encased in a sheaf of adhesions, evidently from the old peritonitis. Three large stones were found tightly packed in the cystic duct and were removed with considerable difficulty, drainage was established. The first three or four days after the operation the patient did fairly well despite the appearance of large quantities of albumen and scanty urine. After a few days the albumen disappeared and the volume of urine increased to normal. A week later the urine again became scanty and contained albumen, and for twenty-four hours prior to the patient's death there was absolute suppression of urine. The heart did badly all of the time, but continued to work after the kidneys stopped. The patient died at the end of two weeks.

Case VIII.—*Cholecystostomy; exploration of right kidney. Recovery.*

Mrs. B.—Age, 28; married; mother of two children. Was seen May 2nd, in consultation with Drs. J. P. Turner and W. P. Beall. She gave a history too long to repeat here. Suffice it to say that four weeks prior to the time she was seen by the writer she had a premature labor due to placento previa and came near dying, and was saved only by good work. When seen by the writer she had been having chills at irregular intervals, and fever most of the time. There was a tender mass in the right upper quadrant. It was believed

by all of the physicians in attendance that she showed marked evidences of pus. In order to explore the tender mass carefully, an incision was made in the right lumbar region and the right kidney palpated. It was found to be normal. The incision was closed without drainage and a second incision was made over the gall-bladder, and this was also found to contain only normal bile. It was believed that the tender mass consisted principally of the prolapsed liver which, together with the kidney was congested and tender. Drainage of the gall-bladder was established, since it was believed it might, in a measure, relieve the congested parts. This patient made a very quick recovery from the operation, which, however, did not seem to affect the course of her disease which continued serenely on its course. However, the patient is now convalescing very satisfactorily.

Case IX.—*Sixty gall-stones in bladder and cystic duct; colic the chief symptom; cholecystostomy. Recovery.*

Mrs. H.—Age, 56 years; married, mother of several children. Was referred by her physician, Dr. W. J. Meadows, and operated on at the Greensboro Hospital, May 15th, 1905. This patient has suffered intensely for a number of weeks with colic. She was a feeble old lady with organic heart lesion, jaundice, emaciation, delirium and other evidences of failing health. On opening the abdomen a hurried exploration of the gall-bladder and ducts was made. Stones were felt in the bladder and cystic ducts. The bladder was quickly opened and the contained bile was withdrawn through a canula and 56 small stones removed. Quite a number were felt in the pelvis of the bladder and cystic duct which could not be removed without undue manipulation. For several days after operation this patient was wildly delirious, but she had no fever and the condition of her wound was ideal throughout. After a few days the delirium all disappeared and her recovery seems to be assured.

Memoranda.

At the forty-ninth annual session of the Medical Society of the State of North Carolina in Wilmington, N. C., in 1902, the address of the President, Dr. Robert S. Young, contained the following:

"At the St. Paul (1901) meeting of the American Medical Association, a new Constitution and By-Laws were adopted. The American Medical Association earnestly requests the co-operation of our Society in its organization. The officers of that Association asked me to bring the matter before you. I herewith transmit the correspondence, and beg you to authorize a special committee to consider this subject and report during this meeting."

Page 33, Transactions of the same session, contains the following:

"The committee on the President's message reported in favor of the suggestions made; * * * they recommend that a committee be appointed to draft a constitution along the lines laid down by the American Medical Association, and to report to the next meeting of the Society.

"The President appointed the following committee on a new constitution: Drs. J. Howell Way, M. H. Fletcher, H. A. Royster, J. A. Burroughs, Geo. W. Pressly."

In accordance with the instructions therein contained, the committee carefully considered the matter, and after a most critical study of the whole subject, submitted the Constitution and By-Laws as contained in the following pages for the action of the Society.

At the fifty-first annual session in Hot Springs, N. C., beginning June 3, 1903, Dr. A. W. Knox, President, the report of the committee was accepted and made the subject of a full and free discussion extending over a portion of two days, when the Society *unanimously* adopted the Constitution and By-Laws as reported by the committee, and contained in the following pages:

CONSTITUTION AND BY-LAWS

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

[Adopted at the Fiftieth Annual Session, Hot Springs, N. C., June 3, 1903.]

ARTICLE I.—Title of the Society.

The name and title of this organization shall be "The Medical Society of the State of North Carolina."

ARTICLE II.—Purposes of the Society.

The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of North Carolina, and to unite with similar organizations in other States to form the American Medical Association; with a view to the extension of medical knowledge, and to the advancement of medical science; to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interests; and to the enlightenment and direction of public opinion in regard to the great problems of state medicine; so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

ARTICLE III.—Component Societies.

Component societies shall consist of those districts and county medical societies which shall hold charters from this State Society.

ARTICLE IV.—Composition of the Society.

Section 1. This Society shall consist of Members, Delegates, Guests, Honorary Members, and Honorary Fellows.

Sec. 2. Members.—The Members of this Society shall be the members of the component county medical societies.

Sec. 3. Delegates.—Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component county societies in the House of Delegates of this Society.

Sec. 4. Guests.—Any distinguished physician not a resident of this State may become a guest during any annual session upon invi-

tation of the Society, or its Council, and shall be accorded the privilege of participating in all of the scientific work of that session.

SEC. 5. THE HONORARY MEMBERS shall consist of such regular physicians as have won distinction by their contributions to medical science; those elderly physicians who, prior to their retirement from practice, have displayed a proper interest in the welfare of this Society, or who, by their example, have reflected credit and honor upon the profession. They must be nominated by the Council and receive a two-thirds vote of the members of the House of Delegates present at the meeting at which their names are presented for election. They shall be exempt from all dues and fines, and shall be entitled to all the privileges of the Society, except the right to vote and hold office.

SEC. 6. THE HONORARY FELLOWS shall consist of such physicians as have been members of this Society continuously for thirty years, and whose dues have been paid during that time. They shall receive a two-thirds vote of the members of the House of Delegates present at the meeting at which their names are proposed for promotion. They shall be exempt from all dues and fines, and shall be entitled to all the privileges enjoyed by active members in good standing.

ARTICLE V.—HOUSE OF DELEGATES.

The House of Delegates shall be the legislative and business body of the Society, and shall consist of (1) delegate elected by the component county societies, and (2) *ex officio* the officers of the Society as defined in this Constitution.

ARTICLE VI.—SECTION AND DISTRICT SOCIETIES.

The House of Delegates may provide for a division of the scientific work of the Society into appropriate sections, and for the organization of such councilor district societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component county societies.

ARTICLE VII.—SESSIONS AND MEETINGS.

SECTION 1. The Society shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

SEC. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

ARTICLE VIII.—OFFICERS.

SECTION 1. The officers of this Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and ten Councillors.

SEC. 2. The President and Vice-President shall be elected for a term of one year. The Secretary, Treasurer and Councillors shall

be elected for terms of three years each. All of these officers shall serve until their successors are elected and installed.

Sec. 3. The officers of this Society shall be elected by ballot, a majority of the votes cast being necessary to elect, by the House of Delegates on the morning of the second day of the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councillor, and no person shall be elected to any such office who is not in attendance upon the Annual Session and who has not been a member of the Society for the past three years. Any nominee for the office of President shall have been an active member of the Society for five years, including the year of his election, shall have attended two of three meetings immediately preceding his nomination, including the meeting at which he is nominated; and shall be a member in good standing at the time of his nomination.

ARTICLE IX.—The Board of Medical Examiners.

Section 1. The seven members of the "Board of Medical Examiners of the State of North Carolina" shall be elected by ballot for a term of six years, a majority of the votes cast being necessary to a choice. The election shall be held on the second day of the annual meeting, and the balloting shall continue until the entire number is elected.

Sec. 2. A vacancy occurring from any cause other than expiration of term of office, shall be filled by the Board or a quorum thereof.

Sec. 3. The elective members of the State Board of Health, and of the State Board of Medical Examiners for Nurses, shall be elected by ballot on the second day of the session.

ARTICLE X.—Funds and Expenses.

Funds for meeting the expenses of the Society shall be arranged for by the House of Delegates by an equal per capita assessment upon each county society, to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publications. Funds may be appropriated by the House of Delegates to defray the expenses of the annual sessions, for publication, and for such other purposes as will promote the welfare of the Society and profession.

ARTICLE XI.—Referendum.

The general meeting of the Society may, by a two-thirds vote, order a general referendum upon any question pending before the House of Delegates, and the House of Delegates may, by a similar vote of its own members, or after a like vote of the general meeting, submit any such question to the membership of the Society for a final vote; and if the persons voting shall comprise a majority of all the members of the Society, a majority of such vote shall determine the question, and be binding upon the House of Delegates.

ARTICLE XII.—The Seal.

The Society shall have a common seal, with power to break, change or renew the same at pleasure.

ARTICLE XIII.—Amendments.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that annual session, provided that such amendment shall have been presented in open meeting at the previous annual session, and that it shall have been sent officially to each component county society at least two months before the session at which final action is to be taken.

By-Laws.

CHAPTER I.—Membership.

Section 1. All members of the component county societies shall be privileged to attend all meetings and take part in all of the proceedings of the annual sessions, and shall be eligible to any office within the gift of the Society.

Sec. 2. The name of a physician upon the properly certified roster of members or list of delegates, of a chartered county society which has paid its annual assessment, shall be *prima facie* evidence of his right to register at the annual session in the respective bodies of this Society: *Provided*, that licentiates of the State Board of Medical Examiners may, if the House of Delegates so elects, at the meeting of the Society at which they receive license, be entitled to register upon payment of the annual dues for that year, and be accorded all the privileges of other members for that year, the Secretary of the Society entering their names and so certifying to the secretary of the county society where the said licentiates reside, but said licentiates desiring to continue membership in this Society must affiliate with their local county society.

Sec. 3. No person who is under sentence of suspension or expulsion from any component society of this Society or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take any part in any of its proceedings until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the annual session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an annual session until he has complied with the provisions of this section.

CHAPTER II.—Annual and Special Sessions of the Society.

Section 1. The Society shall hold an annual session at such time and place as has been fixed at the preceding annual session.

Sec. 2. Special sessions of either the Society or House of Delegates shall be called by the President at his discretion, or upon petition of twenty delegates.

CHAPTER III.—General Meetings.

Section 1. The general meetings shall include all registered members, delegates, and guests, who shall have equal rights to partici-

pate in the proceedings and discussions; and, except guests and honorary members, to vote on pending questions. Each general meeting shall be presided over by the President, or in his absence or disability, or by his request, by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President, and the annual orations, and the entire time of the session, so far as may be, shall be devoted to papers and discussions relating to scientific medicine.

SEC. 2. The general meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same; but any expense in connection therewith must first be approved of by the House of Delegates.

SEC. 3. Except by special vote, the order of exercises, papers and discussions, as set forth in the official program shall be followed from day to day until it has been completed.

SEC. 4. No address or paper before the Society, except those of the President, Orator and Essayist, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject.

SEC. 5. All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done it shall not be published.

CHAPTER IV.—HOUSE OF DELEGATES.

SECTION 1. The House of Delegates shall meet annually at the time and place of the annual session of the Society, and shall so fix hours of meeting as not to conflict with the first general meeting of the Society, or with the meeting held for the address of the President and the annual orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with their duties. But if the business interests of the Society and profession require, it may meet in advance, or remain in session after the final adjournment of the general meeting.

SEC. 2. Each component county society shall be entitled to send to the House of Delegates each year one delegate for every twenty-five members, and one for each major fraction thereof, but each county society holding a charter from this society which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

SEC. 3. A majority of the registered delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Society.

SEC. 4. It shall, through its officers, Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the

Society, and shall constantly study and strive to make each annual session a stepping-stone to future ones of higher interest.

Sec. 5. It shall consider and advise as to the material interests of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist, and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality, and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate work in medical centers, as well as home study and research, and shall endeavor to have the results of the same utilized and intelligently discussed in the county societies. (With these ends in view, five years after the adoption of these By-Laws, except by unanimous consent of the Committee on Scientific Work, no voluntary paper shall be placed upon the annual program, or be heard in the Association, which has not first been read in the county society of which the author is a member.)

Sec. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, in such a manner that not more than one-half of the delegates shall be elected in any one year.

Sec. 9. It shall, upon application, provide and issue charters to county societies organized to conform to the spirit of this Constitution and By-Laws.

Sec. 10. In sparsely settled sections, it shall have authority to organize the physicians of two or more counties into societies, to be designated by hyphenating the names of two or more counties, so as to distinguish them from district and other classes of societies, and these societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 11. It may divide the counties of the State into ten councillor districts, and, when the best interest of the society and profession will be promoted thereby, organize in each a district medical society, to meet midway between the annual sessions of this Society, and members of the chartered county societies, and none others, shall be members in such district societies. (When so organized from the presidents of such district societies shall be chosen the

Vice-Presidents of this Society, and the presidents of the county societies of the district shall be the vice-presidents of such district societies.)

SEC. 12. It shall have authority to appoint committees for special purposes from among members of the Society who are not members of the House of Delegates, and such committees may report to the House of Delegates in person, and may participate in the debate thereon.

SEC. 13. It shall approve all memorials and resolutions issued in the name of the Society before the same shall become effective.

SEC. 14. It shall present a summary of its proceedings to the last general meeting of each annual session, and shall publish the same in the Transactions.

CHAPTER V.—ELECTION OF OFFICERS.

SECTION 1. All elections shall be by secret ballot, and a majority of the votes cast shall be necessary to elect: *Provided*, that when only one name is to be balloted for, the House may suspend the rules and declare the same elected by consent.

SEC. 2. The House of Delegates, on the first day of the annual sessions, shall select a Committee on Nominations, consisting of ten delegates, no two of whom shall be from the same councillor district. It shall be the duty of this committee to consult with the members of the Society, and to hold one or more meetings, at which the best interests of the Society and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of one member for the office of President, and one member for each of the other offices to be filled at that annual session.

SEC. 3. The report of the Nominating Committee and the election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the second day of the general session.

SEC. 4. Nothing in this article shall be construed to prevent additional nominations being made by members of the House of Delegates.

SEC. 5. Any person known to have solicited votes for or sought any office within the gift of this Society, shall be ineligible for any office for two years.

CHAPTER VI.—DUTIES OF OFFICERS.

SECTION 1. The President shall preside at all meetings of the Society and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver an annual address at such time as may be arranged; shall give a deciding vote in case

of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the councillors in building up the county societies, and in making their work more practical and useful.

SEC. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of his death, resignation or removal, the Council shall select one of the Vice-Presidents to succeed him.

SEC. 3. The Treasury shall give bond for the trust reposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Society, together with the bequests and donations. He shall, under the direction of the House of Delegates, sell or lease any estate belonging to the Society, and execute the necessary papers; and shall, in general, subject to such direction, have the care and management of the fiscal affairs of the Society. He shall pay money out of the treasury only on a written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands. He shall charge upon his books the assessments against each component county society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him.

SEC. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend all meetings of the Society, and of the House of Delegates, and he shall keep minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members and delegates at the annual sessions. He shall keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society. In so far as it is in his power, he shall use the printed matter, correspondence and influence of his office to aid the councillors in the organization and improvement of the county societies, and in the extension of the power and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall act as chairman of the Committees on Scientific Work and on Publication. He shall employ such assistants as may be ordered by the Council or the

House of Delegates. He shall annually make a report of his doings to the House of Delegates.

In order that the Secretary may be enabled to give that amount of time to his duties which will permit of his becoming proficient, it is desirable that he should receive some compensation. The amount of his salary shall be fixed by the House of Delegates.

CHAPTER VII.—Councillor Districts.

Section 1. To facilitate the more perfect organization of the medical profession, the State of North Carolina is hereby divided by counties into ten councillor districts, as follows:

First District.—Currituck, Camden, Pasquotank, Perquimans, Gates, Chowan, Washington, Tyrrell, Dare and Hyde.

Second District.—Hertford, Martin, Pitt, Bertie, Beaufort, Lenoir, Jones, Craven, Pamlico and Carteret.

Third District.—New Hanover, Pender, Onslow, Duplin, Bladen, Sampson, Columbus and Brunswick.

Fourth District.—Northampton, Halifax, Nash, Edgecombe, Johnston, Wilson, Wayne and Greene.

Fifth District.—Cumberland, Robeson, Scotland, Richmond, Montgomery, Moore, Harnett and Chatham.

Sixth District.—Wake, Franklin, Warren, Vance, Granville, Person, Caswell, Alamance, Orange and Durham.

Seventh District.—Anson, Union, Stanly, Mecklenburg, Cabarrus, Lincoln, Gaston, Cleveland and Rutherford.

Eighth District.—Rockingham, Guilford, Randolph, Forsyth, Stokes, Surry, Yadkin, Alleghany, Wilkes and Ashe.

Ninth District.—Davidson, Davie, Rowan, Iredell, Alexander, Catawba, Caldwell, Watauga, Mitchell and Burke.

Tenth District.—Buncombe, Yancey, McDowell, Madison, Polk, Henderson, Haywood, Transylvania, Jackson, Swain, Macon, Graham, Clay and Cherokee.

CHAPTER VIII.—Council.

Section 1. The Council shall hold daily meetings during the annual session of the Society, and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councillors. It shall meet on the last day of the annual session of the Society for re-organization and for the outlining of work for the ensuing year. At this meeting it shall elect a Chairman and Secretary, and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such time as may be provided.

Sec. 2. Each Councillor shall be organizer, peace-maker and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies

where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his doings, and of the condition of the profession of each county in his district to each annual session of the House of Delegates. The necessary traveling expenses incurred by such Councillor in the line of the duties herein imposed may be allowed by the House of Delegates upon a proper itemized statement, but this shall not be construed to include his expense in attending the annual session of the Society.

SEC. 3. Collectively the Council shall be the Board of Censors of the Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the general meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a county society, upon which an appeal is taken from the decision of an individual councillor. Its decision in all such cases shall be final.

SEC. 4. The Council shall have the right to communicate the views of the profession and of the Society in regard to health, sanitation and other important matters to the public and the lay press. Such communications shall be officially signed by the Chairman and Secretary of the Council, as such.

CHAPTER IX.—COMMITTEES.

SECTION 1. The standing committees shall be as follows:

A Committee on Scientific Work.
A Committee on Public Policy and Legislation.
A Committee on Publication.
A Committee on Nominations.
A Committee on Finance.
A Committee on Obituaries.
A Committee on Arrangement.

And such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

SEC. 2. The Committee on Scientific Work shall consist of three members, of which the Secretary shall be a member and Chairman, and shall determine the character and scope of the scientific proceedings of the Society for each session, subject to the instructions of the House of Delegates or of the Society, or to the provisions of the Constitution and By-Laws. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be pre-

sented, which shall be adhered to by the Society as nearly as practicable.

SEC. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Society in securing and enforcing legislation in the interest of the public health and of the scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, State and national affairs and elections. Its work shall be done with the dignity becoming a great profession, and with that wisdom which will make effective its power and influence. It shall have authority to be heard before the entire Society upon questions of great concern at such time as may be arranged during the annual session.

SEC. 4. The Committee on Publication shall consist of three members, of which the Secretary shall be one and Chairman, and shall have referred to it all reports on scientific subjects, and all scientific papers and discussions heard before the Society. It shall be empowered to curtail or abstract papers and discussions, and any paper referred to it which may not be suitable for publication in the Transactions may be returned to the author. The Committee shall have authority to arrange for the publication and distribution of the Transactions after receiving competitive bids, and shall use diligence in getting them into the hands of the members. All papers read before the Society shall be the property of the Society.

SEC. 5. The Committee on Nominations shall be appointed and perform its duties in accordance with the provisions of chapter 5, section 2, of these By- Laws. They shall also nominate an Orator, an Essayist, a Leader of Debate, a Committee on Scientific Work, a Committee on Public Policy and Legislation, a Committee on Publication, a Committee on Obituaries, a Committee on Finance, one member of the Committee of Arrangements, Delegates to the American Medical Association, the Virginia Medical Society, the South Carolina Medical Association, and to such other bodies as the Society may determine. They shall also each third year nominate a Board of ten Councillors.

SEC. 6. The Committee on Finance, to consist of three members, shall examine the accounts of the Treasurer and report to the Society, making suggestions as to the amount of assessments for the coming year, the remuneration of the Secretary and the Treasurer, and such other suggestions concerning the finances of the Society as they may think proper. The Committee on Obituaries to consist of three members, shall report to the General Meeting of the Society the names of all members dying during the past year, with other data appropriate for memorial publication.

Sec. 7. The Committee of Arrangements shall consist of one member elected by the House of Delegates each year, and two members elected by the County Society in the territory in which the annual session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meeting places of the Society and of the House of Delegates, the Board of Medical Examiners, and of their respective committees, and shall have general charge of all the arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require.

CHAPTER X. — Of the Sections and Voluntary Communications.

Section 1. The newly installed President shall, at the last session of each meeting, appoint a member to serve as Chairman of each of the following sections, to-wit: Anatomy and Surgery, Materia Medica and Therapeutics, Practice of Medicine, Physiology and Chemistry, Obstetrics, Gynæcology, Medical Jurisprudence and State Medicine, Pathology and Microscopy, and Railway Surgery.

Sec. 2. At any time after the meeting the Chairman of each section may appoint three such members as he may select as his assistants to work up such items as he may designate, confining himself to the general advancement in his section.

Sec. 3. The Chairman of sections shall send in to the Secretary, not later than thirty days previous to each meeting of the Society, the titles of papers to be presented by themselves and their assistants, to be used by the Committee on Scientific Work in making a program for the meeting.

Sec. 4. No paper shall be read before the Society unless the author be present, unless his absence be due to some unavoidable circumstance. A paper presented by proxy may be referred to the Committee on Publication.

Sec. 5. No paper shall be referred to the Committee on Publication until it has been placed in the hands of the Secretary; and the Secretary shall not return any paper accepted by the Society without the consent of the Society, and then he shall take a receipt for the same.

Sec. 6. No paper shall be received by or read before this Society that has been presented to any other Society, excepting only a component society of this Society, or that has been offered for publication in any journal; and in any case of any paper accepted, the author is supposed to have invested with the Society all rights to its ownership.

Sec. 7. No paper shall be published in the Transactions of this Society unless approved by the Committee on Publication; and any paper rejected by said committee shall be returned to the author through the Secretary of the Society.

SEC. 8. It is to be understood that the Society is not to be considered as endorsing all the views and opinions advanced by the authors of papers published in the Transactions of the Society.

CHAPTER XI.—ASSESSMENTS AND EXPENDITURES.

SECTION 1. An assessment of two dollars per capita on the membership of the component societies is hereby made the annual dues of this Society which amount shall be collected by the Secretary of each county society from each of its members on or before the first day of March and forwarded to the Treasurer of the State Society before the first day of April in each year. The Secretary of each county society shall forward a statement of its assessment, together with its roster of all officers and members, list of delegates and list of non-affiliated physicians of the county, to the Secretary of this Society before the first day of April in each year.

SEC. 2. Any county society which fails to pay its assessment, or make the reports required, on or before the date above stated, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the State Society or of the House of Delegates, or receive the volume of Transactions, until such requirements have been met.

SEC. 3. All motions or resolutions appropriating money shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council and House of Delegates on a call of the ayes and noes.

CHAPTER XII.—RULES OF CONDUCT.

The principles set forth in the Declaration of Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XIII.—RULES OF ORDER.

The deliberations of this Society shall be governed by parliamentary usage as contained in Roberts' Rules of Order, unless otherwise determined by a vote of its respective bodies.

CHAPTER XIV.—COUNTY SOCIETIES.

SECTION 1. All county societies now in affiliation with the State Society, or those that may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, upon application to the House of Delegates, receive a charter from and become a component part of this Society.

SEC. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

SEC. 3. Charters shall be issued only upon approval of the House of Delegates, and shall be signed by the President and Secretary of this Society. The House of Delegates shall have authority to revoke the charter of any component county society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

SEC. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concessions shall be made, with the aid of the councillor for the district, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the council, which shall decide what action shall be taken.

SEC. 5. Each county society shall judge of the qualification of its own members, but, as such societies are the only portals to this Society and to the American Medical Association, every reputable and legally registered physician who is practicing, or who will agree to practice, non-sectarian medicine, shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every such physician in the county to become a member.

SEC. 6. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending or expelling him, shall have the right of appeal to the Council and to the House of Delegates.

SEC. 7. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a board and as individual councillors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

SEC. 8. When a member in good standing in a component society moves to another county in this State, his name, upon request, shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

SEC. 9. A physician living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the society in whose jurisdiction he resides.

SEC. 10. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

SEC. 11. Frequent meetings shall be encouraged, and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work, and to give the society the first benefit of such

labors. Official position and other preferments shall be unstintingly given to such members.

SEC. 12. At some meeting in advance of the annual session of this society prior to the first day of April, each county society shall elect a delegate or delegates with alternates, to represent it in the House of Delegates of this Society in the proportion of one delegate to each twenty-five members or major-fraction thereof, and the secretary of the society shall send a list of such delegates with alternates to the Secretary of this Society before the first day of April preceding the annual sessions.

SEC. 13. The secretary of each county society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose, to the Secretary of this Society before the first day of April in each year, and at the same time that the dues accruing from the annual assessment are sent in. In keeping such roster, the secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

CHAPTER XV.—ORDER OF BUSINESS.

SECTION 1. General Meetings.

The President, or, in his absence, one of the Vice-Presidents, in the order of their rank, shall call the Society to order, or in the absence of all these officers, a presiding officer shall be chosen by a majority of the members present.

Address of Welcome. Response.

Any business requiring early attention may be introduced by permission and without discussion referred to the Council, the House of Delegates, or the appropriate committee.

The President's Address.

Reports of Committees.

Reports from the House of Delegates.

Reports from the Council.

Written communications upon medical subjects may be read and discussed. This shall include reports from sections as arranged each year by the program.

The Annual Oration.

The Annual Essay.

The Annual Debate.

Oral Communications and Clinical Reports read and discussed.

Final Reports from the Council.

Final Reports from the House of Delegates.

Final Reports from Committees.

Report to the General Meeting from the House of Delegates appointing the time and place of next session.

Report from the House of Delegates of the Election of Officers and Committees.

Appointment of Chairmen of Sections by President.

Adjournment.

SEC. 2. The House of Delegates.

The President, or in his absence, one of the Vice-Presidents in the order of their rank, shall call the Society to order, or in the absence of all these officers a presiding officer shall be chosen by a majority of the members present.

Roll-call.

The President's Message.

Report of Committee on Credentials.

Reports of Committees.

Reports of Officers.

Reports of the Council.

Communications from the General Meeting of the Society.

Reports from the County Societies.

Appointment of Committee on Nominations.

New Business.

General Discussion of Measures for the Advancement of the Profession.

Reports of Committees.

Election of Officers and Committees.

Selection of Place and Time of Next Meeting.

Unfinished Business.

Adjournment.

(While there may at times appropriately be a variation from the details of the above outline of business procedure, it is the intention of these By-Laws to so arrange that the work other than the purely scientific part of the Society's proceedings be done in the Council and House of Delegates, and the general meetings of the Society be devoted exclusively to scientific work.)

CHAPTER XVI.—AMENDMENTS.

These By-Laws may be amended at any annual session by a majority vote of all the delegates present at that session, after the amendment has laid upon the table for one day.

EXPLANATORY:—"The principles set forth in the Declaration of Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public."—*Constitution and By-Laws Medical Society of the State of North Carolina, adopted at Hot Springs, N. C., June 2, 1903; Chapter XII—Rules of Conduct.* Also see report Committee on Ethics, pages 37 and 38, Trans. N. C. Med. Soc., 1903.

Principles of Medical Ethics.

(Extract from the Proceedings of the American Medical Association at the annual session in New Orleans, May, 1903.)

Report of Committee on Medical Ethics.

Dr. E. Eliot Harris, New York, read the following report:

To the President and Members of the House of Delegates of the American Medical Association:

Your enlarged Committee on Medical Ethics, consisting of the Special Committee and one delegate from each State, have unanimously adopted the following report, entitled the "Principles of Medical Ethics of the American Medical Association," which is herewith submitted.

The following report of the Special Committee shall be printed as an explanatory preface to the Principles of Medical Ethics of the American Medical Association:

Gentlemen:—Your committee has given extended and careful thought to the proposed revision of the Code of Medical Ethics referred to it for consideration. As you will note on reference to the caption of the report the word "code" has been eliminated and the expression "Principles of Medical Ethics of the American Medical Association" adopted as adequately descriptive. In reference to this change, it is proper to say that such action on its part is based on the idea that the American Medical Association may be conceived to occupy some such relation to the constituent State associations as the United States, through its Constitution, holds to the several States. The committee, for this reason, regards it as wiser to formulate the principles of medical ethics without definite reference to "code" or penalties, thus leaving the respective States to form such code, and establish such rules as they may regard to be fitting and proper, for regulating the professional conduct of their members, provided, of course, that in doing so there shall be no infringement on the established ethical principles of this Association. The committee regard as wise and well intended to facilitate the business of the parent organization and promote its harmony this course, which leaves to the State association large discretionary powers concerning membership and other admittedly State affairs. Your committee has retained, to a large extent, the phraseology of the existing code, while aiming at condensation of expression and a better understanding of some of its statements. The report of the committee has been reached unanimously, without dissension or distrust on the part of its members, each aiming to

formulate a result based on principle alone, and without regard to any past or present disagreements or misunderstandings whatsoever; such being the case, the committee invites your candid and unprejudiced attention to the results of its labor, feeling that at least some good has been accomplished.

Respectfully submitted,

E. Eliot Harris, *Chairman.*
William H. Welch.
T. J. Happel.
Joseph D. Bryant.

The report of the committee was unanimously adopted.

Principles of Medical Ethics.

(Adopted at the annual session in New Orleans, May, 1903.)

The American Medical Association promulgates as a suggestive and advisory document the following:

CHAPTER I.—The Duties of Physicians to Their Patients.

Section 1. Physicians should not only be ever ready to obey the calls of the sick and the injured, but should be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, the health and the lives of those intrusted to their care depend on skill, attention and fidelity. In deportment they should unite tenderness, cheerfulness and firmness, and thus inspire all sufferers with gratitude, respect and confidence. These observations are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness or neglect is their own conscience.

Sec. 2. Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honor.

Sec. 3. The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity of disposition, or flaw of character observed during medical attendance should ever be divulged by physicians, except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

SEC. 4. Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient; but to secure the patient against irritating suspense and disappointment the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

SEC. 5. Ordinarily, the physician should not be forward to make gloomy prognostications, but should not fail, on proper occasions, to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient, if absolutely necessary. This notice, however, is at times so peculiarly alarming when given by the physician that its deliverance may often be preferably assigned to another person of good judgment.

SEC. 6. The physician should be a minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts but by the words or manners of the physician, whose solemn duty it is to avoid all utterances and actions having a tendency to discourage and depress the patient.

SEC. 7. The medical attendant ought not to abandon a patient because deemed incurable, for continued attention may be highly useful to the sufferer and comforting to the relatives, even in the last period of the fatal malady by alleviating pain and by soothing mental anguish.

SEC. 8. The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offense, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

CHAPTER II.—THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

ARTICLE I.—DUTIES OR THE SUPPORT OF PROFESSIONAL CHARACTER.

SECTION 1. Every one on entering the profession, and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science and it is incompatible with honorable standing in the profession for physicians to designate their practice as based on an exclusive dogma or a sectarian system of medicine.

SEC. 2. The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; should endeavor to promote

the science and art of medicine, and should entertain a due respect for those seniors who, by their labors, have contributed to its advancement.

SEC. 3. Every physician should identify himself with the organized body of his profession as represented in the community in which he resides. The organization of local or county medical societies, where they do not exist, should be effected, so far as practicable. Such county societies, constituting as they do the chief element of strength in the organization of the profession, should have the active support of their members and should be made instruments for the cultivation of fellowship, for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

SEC. 4. All county medical societies thus organized ought to place themselves in affiliation with their respective State associations, and these, in turn, with the American Medical Association.

SEC. 5. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as without it their respect and confidence can not be commanded, and to the profession because no scientific attainments can compensate for the want of correct moral principles.

SEC. 6. It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye and an unclouded mind are essential to the welfare and even to the life of a human being.

SEC. 7. It is incompatible with honorable standing in the profession to resort to public advertisements or private cards inviting the attention of the persons affected with particular disease; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success, or to employ any of the other methods of charlatans.

SEC. 8. It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade the legal restrictions governing the practice of medicine; or to dispense, or promote the use of secret medicines, for if such nostrums are of real efficacy, any concealment regarding them is inconsistent with beneficence and profes-

sional liberality, and if mystery alone give them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically.

ARTICLE II.—PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SECTION 1. Physicians should not, as a general rule, undertake the treatment of themselves, nor of members of their family. In such circumstances, they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made as they may give rise to embarrassment or interfere with that free choice on which such confidence depends.

SEC. 2. All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

SEC. 3. When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor, should be made by the patient or relatives.

SEC. 4. When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment cannot be assured.

SEC. 5. The affairs of life, the pursuit of health and the various accidents and contingencies to which a physician is peculiarly exposed sometimes require the temporary withdrawal of this physician from daily professional labor and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy which should always be performed with the utmost consideration for the interest and character of the family physician.

ARTICLE III.—THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

SECTION 1. The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident.

SEC. 2. Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

SEC. 3. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence over all others.

SEC. 4. As professional engagements may sometimes cause delay in attendance, the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

SEC. 5. In consultations no insincerity, rivalry or envy should be indulged in; candor, probity and all due respect should be observed toward the physician in charge of the case.

SEC. 6. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which were not the result of previous deliberation and concurrence.

SEC. 7. No decision should restrain the attending physician from making such consequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

SEC. 8. The attending physician at any time may prescribe for the patient; not so the consultant, when alone, except in a case of emergency or when called from a considerable distance. In the first instance the consultant should do what is needed, and in the second should do no more than make an examination of the patient, and leave a written opinion, under seal, to be delivered to the attending physician.

SEC. 9. All decisions in consultation should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

SEC. 10. It may happen that two physicians cannot agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely on the solicitation of the patient or friends.

SEC. 11. A physician who is called in consultation should observe the most honorable and scrupulous regard for the character and standing of the attending physician, whose conduct of the case should be justified, as far as can be, consistently with the conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

ARTICLE IV.—DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SECTION 1. Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and the extent of their medical education.

SEC. 2. The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenious hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

SEC. 3. The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another physician, in the same illness, except in case of a sudden emergency or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

SEC. 5. The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and, indeed, should justify it if consistent with truth and probity; for it often happens that patients become dissatified when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 6. When a physician is called to an urgent case, because the family attendant is not at hand, unless assistance in consultation is desired, the former should resign the care of the patient immediately on the arrival of the family physician.

SEC. 7. It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives, and who, if necessary, may invoke the aid of some of those present. In such a case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

SEC. 8. Whenever a physician is called to the patient of another

physician during the enforced absence of that physician, the case should be relinquished on the return of the latter.

SEC. 9. A physician, while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

SEC. 10. When a physician who has been engaged to attend an obstetric case is absent, and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the patient on the arrival of the physician first engaged.

ARTICLE V.—DIFFERENCES BETWEEN PHYSICIANS.

SECTION 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and cannot be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

SEC. 2. A peculiar reserve must be maintained by physicians toward the public in regard to some professional questions, and as there exist many points in medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which cannot be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

ARTICLE VI.—COMPENSATION.

SECTION 1. By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligations and certain of the public duties named in Sections 1 and 2 of Chapter III, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege.

SEC. 2. It cannot be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform militia duty; to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without due compensation. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

SEC. 3. Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgment from their patients; and it should be deemed a point of

honor to adhere to these rules with as much uniformity as varying circumstances will admit.

SEC. 4. It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character or physicians to solicit or to receive such commissions.

CHAPTER III.—THE DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION 1. As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions and burdens; especially should they be ready to co-operate with the proper authorities in the administration and the observance of sanitary laws and regulations, and they should also be ever ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary police, public hygiene and legal medicine.

SEC. 2. It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

SEC. 3. Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

SEC. 4. It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects, and to make known the injuries sustained by the unwary from the devices and pretensions of artful impostors.

SEC. 5. It is the duty of physicians to recognize and by legitimate patronage to promote the profession of pharmacy, on the skill and proficiency of which depends the reliability of remedies, but any pharmacist who, although educated in his own profession, is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs, or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

CONSTITUTION AND BY-LAWS

FOR

COUNTY MEDICAL SOCIETIES.

(Approved by the Medical Society of the State of North Carolina at the Annual Session in Hot Springs, N. C., June 2, 1903.)
See page 35 Transactions, 1903.

Introductory.

The Committee on Organization of the AMERICAN MEDICAL ASSOCIATION, which was continued at the Saratoga meeting herewith submits a tentative Constitution and By-Laws for County Societies, and in doing so desires to say, that while the provisions it contains are deemed essential to good organization, some of the provisions are suggestive and educational in character and may not be applicable to every county or section. In such cases these may be omitted, or others more appropriate substituted for them. In any event, the high ideals for the individual physician, and the spirit of courtesy and kindness which should govern him in his dealings with his professional neighbors, are here set forth thought and consideration.

The Committee is not a unit as to whether there should be charged an admission fee as called for in Section 1, Chapter V, of the By-Laws, but the Majority of the Committee believes that this is the correct principle, for the average individual does not appreciate that which he gets for nothing, and furthermore that if an admission fee is charged the individual will not be as likely to drop out of the Society as if he obtained his membership for nothing. The Committee advises, however, that in organizing a County Society, or before adopting the new Constitution, that the charter shall be open for all in the county who are eligible and admit such charter members without the admission fee.

We close this report by making a quotation from our report when we submitted the Constitution and By-Laws for State Societies:

Much in the By-Laws submitted may be regarded as "preaching," but it is inserted advisedly, with the sole object of arousing in the minds of each medical society member a desire for the accomplishment of greater ends than has been permitted by the customs and forms of the past. The Committee earnestly desires that the State committees will continue the work of perfecting organization, actu-

ated by that love for our profession that its ideals demand. With the medical profession well organized, medical science will more rapidly step to its appointed high place, and the profession which lives in its atmosphere will have that power and respect in the community that is its right.

J. N. McCormack, Bowling Green, Ky.,
P. Maxwell Foshay, Cleveland, Ohio,
George H. Simmons, Chicago, Illinois,
Committee of the American Medical Association.

The Constitution and By-Laws for county societies is merely suggestive and may be amended or altered to meet local conditions, such alterations being, of course, in harmony with the general plan of organization of the State Society.

J. Howell Way,
M. H. Fletcher,
Geo. W. Pressly,
J. A. Burroughs,
H. A. Royster,
Committee of the Medical Society of the State of North Carolina.

Constitution.

ARTICLE I.—Name and Title of the Society.

The name and title of this organization shall be the ..... County Medical Society.

ARTICLE II.—Purposes of the Society.

The purposes of this Society shall be to bring into one organization the physicians of ..... county; so that by frequent meetings and full and frank interchange of views they may secure intelligent unity and harmony in every phase of their labor as will elevate and make effective the opinions of the profession in all scientific, legislative, public health, material and social affairs, to the end that the profession may receive that respect and support within its own ranks and from the community to which its honorable history and great achievements entitle it; and with other county societies to form the Medical Society of the State of North Carolina, and through it, with other State associations, to form and maintain the American Medical Association.

ARTICLE III.—Eligibility.

Every legally registered physician residing and practicing in ..... county, who is of good moral and professional standing and who does not practice or claim to practice sectarian medicine, shall be eligible for membership.

ARTICLE IV.—Meetings.

Regular meetings shall be held at such time and place as may be determined by the Society. Special meetings may be called by the President on a written request of five members. Calls for special meetings shall state the object of such meeting, and no business except that stated in the call shall be transacted at such meeting.

ARTICLE V.

The officers of this Society shall consist of a President, Vice-President, Secretary, Treasurer, Delegates, and Board of (three) Censors. These officers, except the Delegates and Board of Censors, shall be elected annually for a term of one year. Delegates shall be elected for two years, or in accordance with the Constitution and By-Laws of the State Association. One member of the Board of Censors shall be elected each year to serve for three years, provided that at the first election after the adoption of this Constitution one member of the board shall be elected for one, one for two and one for three years.

ARTICLE VI.—Funds and Expenses.

Funds for meeting the expenses of the Society shall be raised by admission fee, annual dues, special assessments and voluntary contributions. Funds may be appropriated by vote of the Society for such purposes as will promote its welfare and that of the profession.

ARTICLE VII.—Charter.

The Society shall apply to the State Society for a charter at the meeting at which this Constitution and By-Laws are adopted, or as soon thereafter as practicable, and the charter shall be kept in the custody of the secretary.

ARTICLE VIII.—Incorporation.

The Society shall have authority to appoint a Board of Trustees and to provide for articles of incorporation whenever it may deem the same necessary.

ARTICLE IX.—Amendments.

The Society may amend any article of this Constitution by a two-thirds vote of its members at any regular meeting, provided that such amendment shall have been read in open session at a previous regular meeting, and shall have been sent by mail to each member ten days in advance of the meeting at which final action is to be taken.

By-Laws.

CHAPTER I.—Membership.

Section 1. The Society shall judge of the qualification of its members, but as it is the only door to the State Medical Society and to the American Medical Association or physicians within its jurisdiction, every reputable and legally qualified physician in ..... county, who does not practice or claim to practice sectarian medicine, shall be entitled to membership.

Sec. 2. A candidate for membership shall make application in writing, and shall state his age, his college and date of graduation, the places in which he has practiced, and the date of registration in this State. The application must be accompanied by the admission fee, and must be endorsed by two members of this Society. It shall be referred to the Board of Censors, who shall inquire into the standing of the applicant, assure themselves that he or she is duly registered according to the laws of the State, and report at the next regular meeting of this Society. Election shall be by ballot, and two-thirds of the votes of the members present and voting shall be

necessary to elect. The application shall be returned to the Secretary, who shall file it for future reference. Applications for membership from rejected candidates shall not be received within six months of such rejection.

SEC. 3. A physician accompanying his application with a transfer card from another component county society of this or any State within sixty days of the issuance of said card, may be admitted without fee on a majority vote of the members present, and without the application being referred to the Board of Censors. Such applications may be acted on at the meeting at which they are presented on the vote of three-fourths of the members present, otherwise they shall lie over until the next regular meeting. No annual dues for the current year shall be charged against such members, provided the same have been paid to the Society from which the applicant comes.

SEC. 4. A physician residing in an immediately adjoining county may become a member of this Society in like manner and on the same terms as a physician living in this county, on permission of the county society of the county in which the applicant lives, if there be one, or of the State Councillor for this jurisdiction.

SEC. 5. A member in good standing who is free from all indebtedness to this Society, and against whom no charges are pending wishing to withdraw, shall be granted a transfer card. This card shall state the date the member associated himself with this Society, the date of issuance of the card, and shall be signed by the President and Secretary. It shall be accompanied with a copy of the application presented at the time the member joined the Society, for information to the society to which the member desires to attach himself.

SEC. 6. All members shall be equally privileged to attend all meetings and take part in all proceedings, and shall be eligible to any office of honor within the gift of the Society, so long as they conform to this constitution and by-laws, including the payment of the dues to this Society and to the State Society: *Provided*, that no member under sentence of expulsion shall take part in any of the proceedings, or be eligible to any office until relieved of such disability. And provided further, that none of the privileges of membership shall be extended to any person not a member of this Society, except on a majority vote of the Society in regular meeting.

SEC. 7. A member who is guilty of a criminal offence or of gross misconduct, either as a physician or as citizen, or who violates any of the provisions of this constitution and by-laws, shall be liable to censure, suspension or expulsion. Charges against a member must be made in writing and be delivered to the Secretary, who shall immediately furnish a copy to the accused and to the chairman of the Board of Censors. The Board of Censors shall investigate the

charges on their merits, but no action shall be taken by the Board before giving the accused and accusers ample opportunity to be heard. Nor shall any action be taken by the Board within ten days of the presentation of the charges to the accused. The Board shall report (1) that the charges are not sustained; or (2) that the charges are sustained, and that the accused be (*a*) censured; (*b*) suspended for a definite time, or (*c*) expelled. Censure or suspension shall require a two-thirds vote of the members present and voting, and a three-fourths vote of those present and voting shall be required to expel a member. No action shall be taken by the Society in such cases until at least six weeks have elapsed since the filing of the charges. A member suspended for a definite time shall be reinstated at the expiration of the time, without action on his part or on the part of the Society.

SEC. 8. Kindly efforts in the interest of peace, conciliation or reformation, so far as possible and expedient, shall precede the filing of formal charges affecting the character or standing of a member, and the accused shall have opportunity to be heard in his own defence in all trials and proceedings of this nature.

SEC. 9. Members expelled from this Society for any cause shall be eligible for membership after one year from date of expulsion, and on the same terms and in like manner as original applicants.

CHAPTER II.—POWERS AND DUTIES.

SECTION 1. This Society shall have general direction of the affairs of the medical profession of the county, and its influence shall be constantly exerted to better the scientific, material and social condition of every physician within its jurisdiction. Systematic efforts shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every reputable physician in the county.

SEC. 2. A meeting shall be held at .... p. m. on the ..... in each month (or oftener). ..... members shall constitute a quorum. The officers and committee on program shall profit by experience and by the example of other similar societies, and strive to arrange for the most attractive and successful proceedings for each meeting. Younger members especially shall be encouraged to do post-graduate and original research work, and to give this Society the first results of such labors. Crisp papers and discussions and reports of cases shall be arranged for and encouraged, and tedious and profitless proceedings and discussions shall be avoided as far as practicable.

SEC. 3. One meeting during each year may be set apart for a discussion of the business affairs of the profession of the county, with the view of adopting the best methods for the guidance of all. In all proper ways the public shall be taught business methods and

prompt collections are essential to the equipment of the modern physician and surgeon, and that it suffers even more than the profession when this is not recognized.

SEC. 5. The Society shall endeavor to educate its members to the belief that the physician should be a leader in his community, in character, in learning, in dignified and manly bearing, and in courteous and open treatment of his brother physicians, to the end that the profession may occupy that place in its own and the public estimation to which it is entitled.

CHAPTER III.—OFFICERS.

SECTION 1. The officers of the Society shall be elected at the (December) meeting in each year, which shall be known as the annual meeting. Nominations shall be made by informal ballot, and all elections shall be by ballot. The vote of a majority of all the members present shall be necessary to an election.

SEC. 2. The President shall preside at all meetings of the Society, and perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession in the county during the year, and it shall be his pride and ambition to leave it in better condition as regards both scientific attainments and harmony than at the beginning of his term of office.

SEC. 3. The Vice-President shall assist the President in the performance of his duties, shall preside in his absence, and, on his death, resignation or removal from the county, shall succeed to the presidency.

SEC. 4. The Secretary shall record the minutes of the meetings and receive and care for all records and papers belonging to the Society, including its charter. He shall keep account of and promptly turn over to the Treasurer all funds of the Society which may come into his hands. He shall make and keep a correct list of the members of this Society in good standing, noting of each his correct name, address, place and date of graduation, and the date of the certificate entitling him to practice medicine; and in a separate list he shall note the same facts in regard to each legally qualified physician in this county not a member of this Society. It shall be his duty to send a copy of such lists, on blank forms furnished him for that purpose, to the Secretary of the State Society, at such time as may be designated by the State Society. In making such lists, he shall endeavor to account for each physician who has moved into or out of the county during the year, stating, when possible, both his present and past address. At the same time, and with his report of such lists of members and physicians, he shall transmit to the State Society his order on the Treasurer for the annual dues of the Society.

SEC. 5. The Treasurer shall receive all dues and money belonging to the Society from the hands of the Secretary or members, and shall pay out the same only on the written order of the Secretary.

SEC. 6. The delegates shall attend and faithfully represent the members of this Society and the profession of this county in the House of Delegates of the State Society, and shall make a report of the proceedings of that body to this Society at the earliest opportunity.

CHAPTER IV.—COMMITTEES.

SECTION 1. There shall be a Board of Censors as provided in the constitution, a standing committee on programs and scientific work, a committee on public health and legislation, and such special committees as may from time to time be deemed necessary.

SEC. 2. *Board of Censors.*—This Board, consisting of three members, one elected annually, shall examine and report on the qualification of applicants for membership, subjecting each applicant to such examination as it may deem necessary. It shall investigate charges preferred against a member, and report its conclusions and recommendations to the Society. In case of the absence of a member of the Board, the President may appoint some member to fill the vacancy. The senior member of the Board in point of service shall be chairman of the Board.

SEC. 3. *Committee on Program and Scientific Work.*—This committee shall consist of the President, Vice-President and Secretary. It shall be its duty to promote the scientific and social functions of the Society by arranging attractive programs for each meeting, and by urging each member to take part in the scientific work. It shall stimulate fraternalism and good feeling among the members in every way possible.

SEC. 4. *Committee on Public Health and Legislation.*—This committee shall consist of three members, who shall be appointed annually by the President. It shall be its duty to enforce and support the sanitary and medical laws of the State in this county, to cooperate with the legislative committee of the State Society in all matters pertaining to legislation, and to prosecute quacks and medical pretenders in this county.

CHAPTER V.—FUNDS AND EXPENSES.

SECTION 1. The admission fee, which must accompany the application, shall be $5.00, and shall include the annual dues for the fiscal year, provided that when more than one-half of the fiscal year has elapsed at the time of election of a member, one-half of the annual dues shall be remitted, making the admission fee in such cases $4.00. The admission fee shall be returned if the applicant is not accepted.

SEC. 2. The annual dues shall be $2.00, and shall be payable on

January 1st of each year. Any member who shall fail to pay his annual dues by April 1st shall be held as suspended without action on the part of the Society. A member suspended for non-payment of dues shall be restored to full membership on payment of all indebtedness. Members more than one year in arrears shall be dropped from the roll of members.

SEC. 3. The fiscal year of this Society shall be from January to December, inclusive.

CHAPTER VI.—ORDER OF BUSINESS.

The order of business shall be as follows:

1. Call to order by the President.
2. Reading of minutes of last meeting.
3. Clinical cases.
4. Papers and discussions.
5. Unfinished business.
6. Miscellaneous business.
7. Announcements.
8. Adjournment.

CHAPTER VII.—RULES OF ORDER.

The deliberations of this Society shall be governed by parliamentary usage as contained in Roberts' Rules of Order, unless otherwise determined by vote.

CHAPTER VIII.—PRINCIPLES OF ETHICS.

The Principles of Ethics of the American Medical Association and of the Medical Society of the State of North Carolina shall be the Code of this Society.

CHAPTER IX.—AMENDMENTS.

These by-laws may be amended at any regular meeting by a two-thirds vote thereof, provided that such amendment has been read in open session at the preceding regular meeting, and a copy of the same has been sent to each member by the Secretary ten days in advance of the meeting at which final action is to be taken.

Members of the Component County Medical Societies of the Medical Society of the State of North Carolina, May 1, 1905.

(Gentlemen will confer a favor upon the Secretary by promptly advising of any errors, deaths, removals or other changes noted. It is desired to preserve the record as accurate as possible, *and it is to be remembered that it will be just so accurate as reported by the county society officers and members.*)

ALAMANCE COUNTY SOCIETY.

*President, W. G. Stafford ..... Burlington.
*Secretary, J. W. McPherson ..... Haw River.

Members and Address.	*Licensed.*	*Joined State Society.*
*Anderson, C. A., Burlington ..... Col. P. & S., Balto., 1900.	1893	1899
Faucett, T. S., Burlington ..... Balto. Med. Coll., 1893.	1893	1896
Freeman, R. A., Burlington ..... 1½ course Wash. Univ., Balto.	1879	1904
*Goley, W. R., Graham ..... Coll. P. & S., Balto., 1885.	1885	1893
Long, Geo. W., Graham ..... Univ. Pa., 1877.	1877	1877
*McPherson, J. W., Haw River ..... Balto. Med. Coll., 1898.	1898	1898
*McPherson, L. D., Haw River ..... Univ. Md., 1903.	1903	1903
Montgomery, A. M., Burlington ..... N. C. Med. Coll.	1903	1904
*Moore, H. R., Burlington ..... Coll. P. & S., Atlanta, 1899.	1899	1904
Page, John W., Burlington ..... Coll. P. & S., Balto.	....	1904
*Parris, O. J., Swepsonville ..... Balto. Med. Coll., 1897.	1897	1904
*Pickett, J. A., Burlington ..... Univ. Nashville, 1894.	1894	1904
*Stafford, W. G., Burlington ..... Bellevue, N. Y., 1891.	1879	1890
*Tate, W. N., Mebane ..... Louisv. Med. Coll., 1874.	....	1905

* Registered present at Greensboro, session 1905.

Members and Address.	*Licensed.*	*Joined State Society.*
*Tyson, T. D., Mebane Univ. Col. Med., Va., 1899.	1899	1904
Thompson, J. B., Graham Univ. Coll. Med., Va.	1899	1905
*Walker, W. E., Saxapahaw Med. Coll., Va.	1903	1905
*Walker, L. A., Burlington Univ. Coll. Med., Va.	1899	1904
Watson, Geo. S., Union Ridge Coll. P. & S., Balto., 1874.	....	1904
*York, N. D., Mebane	....	1905

ANSON COUNTY SOCIETY.

President, J. M. Dunlap ..... Ansonville.
Secretary, J. M. Covington, Jr. ..... Wadesboro.

Ashe, E. S., Wadesboro Coll. P. & S., Balto., 1885.	1885	1904
Barrett, W. W., Peachland Ky. Sch. Med., 1892.	1897	1904
Beckwith, R. B., Morven Vanderbilt Univ., 1883.	....	1904
Bennett, J. H., Wadesboro Univ. Md., 1894.	1894	1904
Carpenter, S. B., Cedar Hill Univ. N. Y., 1876.	....	1904
Covington, J. M., Wadesboro Med. Coll. S. C., 1874.	1879	1879
Covington, J. M., Jr., Wadesboro Med. Chi., Philadel., 1899.	1899	1904
Dunlap, J. M., Ansonville Univ. N. Y., 1876.	....	1904
Hart, J. E., Deep Creek Univ. Md., 1897.	1897	1904
*Kerr, J. Edwin, Lilesville Univ. Md., 1898.	1898	1898
*Meisenheimer, T. F., Morven Univ. N. Y., 1880.	1881	1881
Smith, L. C., Polkton Balto. Med. Coll., 1892.	....	1904
Thompson, C. D., Morven Univ. Tenn., 1901.	1901	1904

ASHE COUNTY SOCIETY.

President, J. W. Colvard, ... Jefferson.
Secretary, J. L. Ballou ..... Crumpler.

Members and Address.	*Licensed.*	*Joined State Society.*
Ballou, J. L., Crumpler ..... Univ. Nashville, 1901.	1902	1902
Barton, J. H., Weaver's Ford ..... Registered on oath practice prior to 1885.	....	1904
Blevins, Manly, Beaver Creek ..... Registered on oath practice prior to 1885.	....	1904
Call, T. J., Gap Creekmore ..... Grad. P. & S., Balto. Registered on permit B'd Exs. practice prior to 1885.	....	1904
Colvard, J. W., Jefferson ..... Attended P. & S., Balto., 1 year, 1883.	....	1904
Jones, A. L., Brandon ..... Univ. Coll. Med., Va., 1901.	1901	1904
Jones, T. J., Lansing ..... Tenn. Med. Coll., 1895.	....	1904
Jones, R. W., Clifton	....	1904
Lemly, S. T., Todd	....	1904
Pennington, S. E., Sturgills ..... P. & S., Balto., 1891.	1892	1904
Roberts, J. D., Mount Olive ..... Bellevue Med. Coll., 1875.	1877	1904
Testerman, J. C., Jefferson	....	1904

BEAUFORT COUNTY SOCIETY.

President, H. M. Bonner .....Aurora.
Secretary, Ira M. Hardy .....Washington.

Blount, W. A., Washington ..... Bellevue Med. Coll., 1892.	1892	1894
Blount, J. G., Washington ..... Bellevue Med. Coll., 1892.	1892	1893
Bonner, H. M., Aurora ..... Med. Coll. Va., 1897.	1897	1902
Brown, E. M., Washington ..... Bellevue Med. Coll., 1896.	1896	1901
Bullock, W. J., Belhaven ..... Univ. Pa., 1858.	....	1904
Dixon, W. H., Edwards ..... Med. Coll. Va., 1901.	1901	1901
Hardy, Ira M., Washington ..... Med. Coll. Va., 1901.	1902	1902
Hunter, H. H., Pinetown ..... Med. Coll. Va., 1900.	1901	1904
Kellum, Wm. D., Belhaven	....	1904
Mariner, N. C., Belhaven ..... Univ. Coll. Med., Va.	1903	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Nicholson, J. T., Bath P. & S., Balto., 1885.	1885	1904
Nicholson, P. A., Washington P. & S., Balto., 1889.	1889	1901
Nicholson, S. T., Washington P. & S., Balto., 1881.	1885	1902
Rodman, Jno. C., Washington Bellevue Med. Coll., 1892.	1892	1895
Small, W. P., Washington Univ. N. Y., 1875.	....	1905
Staley, S. W., Aurora Med. Coll. S. C., 1901.	1901	1904
*Tayloe, David T., Washington Bellevue Med. Coll., 1885.	1885	1885
Tayloe, Joshua, Washington Bellevue Med. Coll., 1892.	1892	1904
Tayloe, Armisted K., Washington	....	....

BERTIE COUNTY SOCIETY.

President, Wayland Mitchell ..... Lewiston.
Secretary, E. H. Horton ..... Aulander.

Capehart, A., Roxabel Balto. Med. Coll., 1887.	....	1905
Harrell, W. J., Aulander Coll. P. & S., Balto.	....	1892
Horton, E. H., Aulander Coll. P. & S., Balto., 1884.	....	1904
Jenkins, P. C., Robodel Bellevue Med. Coll., 1873.	....	1904
Mitchell, Wayland, Lewiston Univ. Md., 1895.	1896	1904
Nowell, L. A., Colerain Univ. Md., 1894.	1894	1905
*Sawyer, C. J., Windsor Coll. P. & S., Balto., 1895.	1895	1897

BLADEN COUNTY SOCIETY.

President, W. H. G. Lucas ..... White Hall.
Secretary, Newton Robinson ..... Elizabethtown.

Clark, Geo. L., Clarkton Univ. N. Y., 1876.	....	1904
Evans, L. B., Clarkton Univ. Coll. Med., 1900.	1900	1904
Lucas, W. H. G., White Hall Univ. Philadel., Pa., 1869.	....	1904
Robinson, Newton, Elizabethtown Univ. Philadel., Pa., 1869.	....	1904

BRUNSWICK COUNTY SOCIETY.

President, E. G. Goodman ..... El Paso.
Secretary, J. Arthur Dosher ..... Southport.

Members and Address.	*Licensed.*	*Joined State Society.*
Curtis, W. G., Southport ..... Dartmouth Med. Coll., 1846.	....	1904
Dosher, J. Arthur, Southport ..... Baltimore Med., 1903.	1903	1903
Goley, W. R., Supply ..... Univ. Coll. Med., Va., 1901.	1901	1904
Goodman, E. G., El Paso..... Univ. Md., 1891.	1891	1892
Moore, T. V., Phœnix ..... Balto. Med. Coll., 1901.	1901	....
Watson, D. I., Southport ..... Univ. Louisville, Ky., 1890.	1890	1891

BUNCOMBE COUNTY SOCIETY.

President, C. P. Ambler ..... Asheville.
Secretary, Gaillard S. Tennent ..... Asheville.

Ambler, C. P., Asheville ..... West. Reserve Univ., O., 1889.	1890	1891
*Battle, Samuel W., Asheville ..... Bellevue, N. Y., 1875.	....	1887
Briggs, H. H., Asheville ..... Univ. Yale, 1897.	1901	1903
Brown, T. E. W., Asheville ..... P. & S., N. Y., 1900.	1903	1904
Brownson, W. C., Asheville ..... Univ. N. Y., 1878.	....	1896
*Burroughs, Jas. A., Asheville ..... Louisville Med. Coll., 1882.	1884	1889
Calloway, A. W., Asheville ..... Chicago Homeop. Med. Coll., 1895.	1899	1904
Cheeseborough, T. P., Asheville ..... Univ. N. Y., 1891.	1891	1899
Clemenger, F. J., Asheville..... Univ. Denver, 1902.	1903	1904
Clentz, W. J., Alexander ..... Vanderbilt Univ., 1888. Reg. practice prior to 1885.	....	1904
Cotton, C. E., Black Mountain ..... Univ. Wooster, O., 1889.	1901	1901
David, J. E., Biltmore ..... Univ. Pa., 1897.	1897	1904
Drake, J. H., Jr., Asheville ..... Med. Coll. Ala., 1891.	1901	1901

Members and Address.	*Licensed.*	*Joined State Society.*
Dunn, W. L., Asheville Univ. Mich., 1900.	1900	1900
*Fletcher, M. H., Asheville Bellevue Med. Coll., 1881.	1881	1881
*Glenn, E. B., Asheville Jeff. Med. Coll., 1896.	1896	1899
Harris, I. A., Jupiter One course Jeff. Med. Coll., 1860.	1885	1894
Hemphill, W. E., Arden Balto. Med. Coll., 1892.	1896	1894
*Holmes, L. E., Biltmore Univ. Pa., 1897.	1901	1903
Jordan, C. S., Asheville Univ. N. Y., 1890.	1891	1899
Laird, E. C., Asheville Univ. Md., 1877.	....	1900
Lee, P. H., Asheville Univ. Nashville, 1894.	1898	1904
*McBrayer, L. B., Asheville Louisville Med. Coll., 1889.	1891	1899
McCracken, C. M., Fairview Non-Grad. N. C. Med. Coll.	1896	1904
McLean, J. N., Democrat Tenn. Med. Coll., 1899.	....	1904
Meriwether, F. T., Asheville Univ. Louisville, Ky., 1886.	1888	1888
Merrimon, Louise A., Asheville Woman's Med. Coll., 1900.	1899	1904
Minor, C. L., Asheville Univ. Va., 1888.	1895	1898
Morris, E. R., Asheville Louisville Med. Coll., 1896.	1896	1899
Orr, Peter B., Asheville Jeff. Med. Coll., 1901.	1901	1904
Orr, C. C., Asheville Univ. Md., 1904.	1904	1905
Paquin, Paul, Asheville Univ. Mo., 1887.	1899	1899
Purefoy, Geo. W., Asheville Jeff. Med. Coll., 1876.	1884	1904
Reagan, J. A., Weaverville Vanderbilt Univ., 1877.	....	1881
Reagan, W. L., Weaverville P. & S., Baltimore, 1897.	1881	1894
Reed, C. E., Asheville Jeff. Med. Coll., 1891-1895.	1902	1904
Reynolds, Carl V., Asheville Univ. N. Y., 1895.	1895	1896

Members and Address.	*Licensed.*	*Joined State Society.*
Reynolds, T. F., Leicester ..... N. C. Med. Coll., 1904.	1904	1905
Reynolds, J. H., Asheville ..... Louisville Med. Coll., 1903.	1903	1903
von Ruck, Karl Asheville ..... Univ. Mich., 1879.	....	1891
von Ruck, S. H., Asheville ..... Bellevue Med. Coll., 1899.	1899	1902
Sawyer, James, Asheville ..... Bellevue Med. Coll., 1897.	1897	1899
Sevier, Dan. E., Asheville ..... Jeff. Med. Coll., 1895.	1895	1899
Sevier, Jos. T., Asheville ..... Jeff. Med. Coll., 1895.	1895	1899
*Stevens, M. L., Asheville ..... Balto. Med. Coll., 1891.	1892	1893
Tennent, Gaillard S., Asheville ..... N. C. Med. Coll., 1894.	1894	1898
*Weaver, H. Bascom, Asheville ..... Wash. Univ. Med., 1872.	1881	1881
*Whittington, W. P., Asheville ..... P. & S., Balto., 1882.	1882	1882
Williams, Jno. Hey, Asheville ..... Univ. Iowa, 1862.	1881	1881
Zimmermann, C. St. V., Asheville ..... National Univ., Wash., D. C., 1895.	1903	1904

BURKE COUNTY SOCIETY.

*President, Isaac M. Taylor.....Morganton.
Secretary, Ed. W. Phifer .....Morganton.

*Anders, McC., Connelly's Springs ..... Md. Med., Coll., 1901.	1902	1902
Anderson, Jas. R., Morganton ..... Tulane Univ., 1882.	1885	1904
Henneesee, E. A., Glen Alpine ..... U. S. Grant Univ., 1900.	1902	1904
Laxton, Jos. L., Morganton ..... Wash. Univ., Md., 1868.	....	1891
McCampbell, John, Morganton ..... Balto. Med. Coll., 1894.	1895	1899
Moran, Geo. H., Morganton ..... Univ. Md., 1865.	....	1888
*Murphy, P. L., Morganton ..... Univ. Va., 1870; Univ. Md., 1871.	1873	1873
Phifer, Ed. W., Morganton ..... N. C. Med. Coll., 1902.	1902	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Riddle, Jos. B., Bridgewater Vanderbilt Univ., 1898.	1904	1905
Speight, R. H., Jr., Morganton Univ. Md., 1901.	1901	1901
*Taylor, Isaac M., Morganton P. & S., N. Y., 1882.	1883	1883
Warlick, E. S., Morganton Univ. Tenn., 1881.	....	1904

CABARRUS COUNTY SOCIETY.

President, W. H. Lilly ..... Concord.
*Secretary, Francis O. Rogers ..... Concord.

Archey, L. M., Concord P. & S., Balto., 1885.	1885	1888
Bardhardt, C. H., Mount Pleasant Jeff. Med. Coll., 1895.	1895	1904
Barrier, P. A., Mount Pleasant Long Island Med. Coll., 1861.	1861	1861
Black, J. C., Pioneer Mills Univ. Md., 1886.	1886	1891
Burleyson, L. N., Concord Univ. Md., 1891.	1891	1904
*Caldwell, D. G., Concord Univ. Md., 1885.	1885	1885
Flow, J. W., Glass N. C. Med. Coll., 1898.	1903	1904
Foil, M. A., Mt. Pleasant Jeff. Med. Coll., 1891.	1891	1905
Gouger, G. J., Tulin Univ. Md., two courses.	1891	1899
Grier, S. A., Harrisburg	....	1904
Jerome, J. R., Georgeville Univ. Md., 1890.	1890	1904
Lafferty, J. S., Concord Univ. Md., 1881.	....	1890
Lilly, W. H., Concord Univ. N. Y., 1860.	1860	1874
*Pemberton, W. D., Concord Univ. Md., 1887.	1887	1887
Pharr, T. F., Concord Bellevue Med. Coll., 1875.	1881	1881
*Rogers, F. O., Concerd Univ. Md., 1901.	1901	1901
Smoot, J. E., Concord Balto. Med. Coll., 1891-1893.	1894	1902

Members and Address.	*Licensed.*	*Joined State Society.*
Walker, J. O., Concord Vanderbilt Univ., 1888.	1888	1904
*Young, Robert S., Concord Univ. N. Y., 1881.	1882	1882

CALDWELL COUNTY SOCIETY.

*President, A. A. Kent ..... Lenoir.
*Secretary, W. P. Ivey ..... Lenoir.

Carter, G. H., Blackstone Univ. N. Y., 1877.	....	1904
Flowers, B. G., Granite Falls, R. F. D. Non-graduate; practice prior to 1885.	....	1904
Flowers, G. E., Granite Falls Ico. So. Med. Coll., Ga.; practice prior to 1885.	....	1904
*Ivey, W. P., Lenoir Univ. Md., 1885.	1885	1891
Jones, A. D., Granite Falls Louisville Med. Coll., 1876.	....	1904
*Kent, A. A., Lenoir Jeff. Med. Coll., 1885.	1885	1894
Mattocks, C. J., Lenoir	....	1904
McNairy, C. B., Lenoir P. & S., Balto., 1893.	1893	1905
White, W. M., Collettsville P. & S., Atlanta, 1899.	1899	1904
Wilson, C. L., Lenoir U. S. Grant Univ., 1903.	1903	1905
*Wright, J. B., Granite Falls Univ. Coll. Med., Va., 1899.	1899	1899

CARTERET COUNTY SOCIETY.

President, ———— .....
Secretary, ———— .....

Adams, L. C., Atlantic N. C. Med. Coll., 1903.	1903	1904
Chapin, A. B., Beaufort Univ. Philadelphia, Pa., 1868.	....	1904
Clarke, F. M., Beaufort P. & S., Balto., 1893.	1894	1904
Davis, Geo., Beaufort Ky. School Med., 1896.	....	1904
Duncan, C. L., Beaufort Univ. Md., 1902.	1902	1904
George, D. S., Marshallberg N. C. Med. Coll., 1903.	1903	1903

Members and Address.	*Licensed.*	*Joined State Society.*
Mason, C. N., Harlow P. & S., Balto., 1882.	....	1904
*Maxwell, C. S., Beaufort Univ. South, Tenn., 1901.	1899	1904
Paul, Wm. T., Stacey Univ. Md., 1869.	....	1904

CASWELL COUNTY SOCIETY.

*President, J. F. Badgett ..... Blackwell.
Secretary, S. A. Malloy ..... Yanceyville.

*Badgett, J. F., Blackwell P. & S., Balto., 1881.	....	1904
Gunn, J. L., Ashland Ky. School Med., 1877.	....	1904
*Love, B. E., Ridgeville Univ. Md., 1904.	1904	1905
Malloy, S. A., Yanceyville Ky. School Med., 1897.	1898	1903
McBride, M. H., Milton Univ. Coll. Med., Va., 1901.	1901	1904
*Norman, Geo. W., Thompsonville Balto. Med. Coll., 1896.	1896	1904

CATAWBA COUNTY SOCIETY.

President, W. L. Abernethy ..... Hickory.
*Secretary, Geo. H. West ..... Newton.

Abernethy, H. L., Hickory Louisville Med. Coll., 1886.	1887	1904
Abernethy, W. L., Hickory Ky. School Med., 1877.	1879	1904
Baker, R. B., Hickory Univ. Md., 1852.	....	1904
Campbell, Jas. R., Newton Wash. Univ., Md., 1871.	....	1898
*Childs, J. A., Hickory Med. Coll. S. C., 1898.	1903	1903
*Everhart, W. H., Newton Univ. Md., 1903.	1904	1904
Foard, Fred. F., Jugtown Louisville Med. Coll., 1886.	1886	1904
Herman, F. L., Conover Louisville Med. Coll., 1891.	1891	1904
Johnson, J. T., Hickory Univ. Pa., 1861.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Little, Q. M., Catawba Univ. Md., 1871.	....	1904
Long, Fred. Y., Catawba N. C. Med. Coll., 1899.	1898	1904
Long, T. W., Catawba Univ. N. Y., 1885.	....	1904
Menzies, H. C., Hickory N. C. Med. Coll., 1894.	1894	1894
Moser, D. M., Claremont N. C. Med. Coll., 1898.	1896	1904
*Shuford, J. H., Hickory Univ. Mich., 1901.	1902	1902
*West, Geo. H., Newton Univ. N. Y., 1872.	1880	1895
*Whitsides, B. F., Hickory Univ. Med., 1877.	1881	1881
Wilson, W. E., Sherrels Ford Louisville Med. Coll., 1886.	1886	1904

CHATHAM COUNTY SOCIETY.

President, R. W. Palmer .....Gulf.
Secretary, H. T. Chapin, ...Pittsboro.

Burns, William, Goldstone Col. P. & S., Balto., 1878.	....	1905
Chapin, H. T., Pittsboro Louisv. Med. Coll., 1886.	1886	1886
*Edwards, J. D., Siler City Louisv. Med. Coll., 1887.	....	1894
Kirkman, T. A., Lindhurst	....	1905
Palmer, R. W., Gulf Louisv. Med. Coll., 1890.	1891	1891
Taylor, J. N., Bynum Med. Coll., Va., 1901.	1902	1902

CHEROKEE COUNTY SOCIETY.

President, J. F. Abernathy .....Murphy.
*Secretary, S. C. Highway .....Murphy.

Abernathy, J. F., Murphy	1885	1904
*Highway, S. C., Murphy Med. Coll. Ohio, 1885.	1904	1904
Patton, W. O., Murphy	....	1904
Webb, B. G., Andrews Louisville Med. Coll., 1885.	1885	1904

CLEVELAND COUNTY SOCIETY.

President, W. F. Mitchell ..... Shelby.
*Secretary, R. C. Ellis ..... Shelby.

Members and Address.	*Licensed.*	*Joined State Society.*
Aydolette, J. P., Earls ..... Univ. Ky., 1901.	1903	1903
Champion, C. O., Mooresboro ..... Atlanta Med. Coll., 1887.	....	1898
Dixon, G. E., Belwood ..... P. & S., St. Louis, 1903.	1903	1903
*Ellis, R. C., Shelby ..... Univ. Balto., 1886.	....	1901
Falls, B. F., Cleveland Mills ..... Univ. Tenn., 1881.	....	1904
Gold, G. M., Lawndale ..... Atlanta Med. Coll., 1892.	....	1904
Goode, W. A., Waco ..... Atlanta Med. Coll., 1890.	....	1904
Gregg, W. T., Shelby, R. F. D.	....	1904
Houser, E. A., Fallston..... Univ. Balto., 1902.	1902	1904
Houser, W. H., Cherryville ..... N. C. Med. Coll., 1900.	1900	1904
Lattimore, E. B., Lawndale ..... Bellevue Med. Coll., 1898.	1896	1904
Lee, L. V., Lattimore ..... Atlanta Med. Coll., 1894.	1897	1904
McBrayer, T. E., Shelby ..... P. & S., Balto., 1879.	....	1904
McKay, J. L., Kings Mountain ..... Univ. Phila., 1870.	....	1904
Mitchell, W. F., Shelby ..... Univ. Md., 1899.	1900	1904
Oates, Geo., Grover ..... Univ. Louisville, Ky., 1894.	1902	1904
Palmer, B. H., Shelby ..... Louisville Med. Coll., 1898.	1898	1904
*Royster, S. S., Mooresboro ..... Tenn. Med. Coll., 1890.	1896	1903
Self, L. L., Toluca ..... Univ. Coll. Med., Va., 1901.	1901	1904
Trent, W. J., Earls	....	1904
Wood, J. W., Shelby, R. F. D.	....	1904

COLUMBUS COUNTY SOCIETY.

President, J. Clegg Hall .....Boardman.
Secretary, Thos. C. Johnson .....Vineland.

Members and Address.	*Licensed.*	*Joined State Society.*
Floyd, A. G., Fair Bluff ..... Univ. Md., 1885.	....	1904
Gore, D. N., Mount Tabor	....	1904
Hall, J. Clegg, Boardman ..... Univ. Coll. Med., Va., 1899.	1899	1904
Johnson, Thos. C., Vineland ..... Med. Coll., Va., 1903.	1903	1905
Jordan, D. B., Cronley ..... Jeff. Med. Coll., 1885.	....	1904
Maxwell, H. B., Whiteville ..... Univ. Md., 1902.	1902	1902
McGougan, J. M., Cerro Gordo ..... Univ. Nash., Tenn.	....	1904
Smith, W. F., Chadborn ..... N. C. Med. Coll., 1904.	1904	1905
Thompson, N. A., Whiteville ..... Non-graduate N. C. Med. Col.	1895	1904
*Withers, S. M., Chadborn ..... N. C. Med. Coll., 1902.	1902	1902

CRAVEN COUNTY SOCIETY.

President, Chas. Duffy .....New Bern.
*Secretary, R. Du Val Jones .....New Bern.

Caton, Geo. A., New Bern ..... Med. Coll. Va., 1898.	1898	1904
Covington, L. C., Vanceboro ..... Univ. Coll. Med., Va., 1901.	1902	....
Duffy, Charles, New Bern ..... Univ. N. Y., 1859.	....	1904
Duffy, Francis, New Bern ..... Univ. Va., 1868.	1872	1872
Dugoid, J. W., New Bern ..... Univ. Md., 1892.	1893	1904
Hammond, A. F., Pollocksville, Jones Co..... Univ. Coll. Med., Va., 1903.	1903	1905
Hughes, F. W., New Bern ..... Univ. Pa., 1880.	1885	1904
*Jones, R. DuVal, New Bern ..... Univ. Md., 1896.	1897	1904
Nicholson, J. L., Vanceboro ..... Univ. Md., 1904.	1904	1905

Members and Address.	*Licensed.*	*Joined State Society.*
Pollock, Raymond, Dover Jeff. Med. Coll., 1897.	1900	1900
*Primrose, R. S., New Bern Bellevue Med. Coll., 1889.	1890	1904
Rhein, J. F., New Bern Bellevue Med. Col., 1894.	1893	1904

CUMBERLAND COUNTY SOCIETY.

President, T. D. Haigh ..... Fayetteville.
Secretary, John D. MacRae ..... Fayetteville.

Averitt, K. G., Stedman Balto. Med. Coll., 1893.	1893	1902
Graham, Geo. A., Raeford Univ. N. Y., 1876.	....	1904
Haigh, T. D., Fayetteville Univ. N. Y., 1851.	....	1874
Highsmith, J. F., Fayetteville Jeff. Med. Coll., 1889.	1889	1893
*Highsmith, Seavy, Hope Mills Univ. Med. Coll., Va., 1901.	1901	1902
MacRae, John D., Fayetteville Univ. Nashville, 1897.	1899	1899
Marsh, J. H., Fayetteville Jeff. Med. Coll., 1889.	1889	1890
McGougan, J. V., Fayetteville Univ. Md., 1893.	1893	1904
McKethan, John A., Fayetteville N. C. Med. Coll., 1901.	1901	1904
*Rose, A. S., Fayetteville Univ. Coll. Med., Va., 1901.	1901	1904
Watson, Leon, Hope Mills N. C. Med. Coll., 1900.	1900	1904

CURRITUCK COUNTY SOCIETY.

President, Henry M. Shaw ..... Shawsboro.
*Secretary, Stuart M. Mann, Moyock ..... Moyock.

Garrington, J. F., Conyock	....	....
Griggs, W. T., Poplar Branch Univ. Va., 1896.	1896	1901
*Mann, Stuart M., Moyock P. & S., Balto., 1895.	1895	1904
Newbern, J. M., Jarvisburg	....	....
Ritter, F. W., Moyock 1 Co. P. & S., Balto., 1885.	1885	1885
Shaw, Henry M., Shawsboro Wash. Univ., Md., 1871.	....	1904

DAVIDSON COUNTY SOCIETY.

*President, W. J. Vestal .....Lexington.
*Secretary, D. J. Hill .....Lexington.

Members and Address.	*Licensed.*	*Joined State Society.*
Anderson, Abel, Denton	....	1904
Beall, J. F., Linwood Ico. Univ., N. Y., 1865.	1885	1887
Bird, Joseph, Thomasville	....	1904
*Buchanan, E. J., Lexington Univ. Md., 1892.	1892	1900
Cathell, J. E., Linwood, R. F. D. Univ. Md., 1899.	1902	1902
Dorsett, H. W., Bethany Jeff. Med. Coll.	1885	1885
Fitzgerald, J. Y., Jackson Hill Jeff. Med. Coll., 1889.	1889	1904
*Hill, D. J., Lexington P. & S., Balto., 1893.	1893	1894
*Hill, Joel, Lexington P. & S., Balto., 1880.	1885	1886
Hill, W. L., Lexington, R. F. D. P. & S., Balto., 1893.	1893	1904
*Julian, C. A., Thomasville Louisville Med. Coll., 1888.	1891	1893
*Mock, J. H., Thomasville Med. Coll. Va., 1898.	1898	1904
*Myers, J. A., Lexington	....	1904
*Peacock. J. W., Thomasville Tulane Univ., La., 1901.	1901	1905
Webb, A. H., Lexington N. C. Med. Coll., 1901.	1901	1905
Zimmerman, R. U., Lexington, R. F. D.	....	1904

DAVIE COUNTY SOCIETY.

*President, M. D. Kimbrough .....Mocksville.
*Secretary, W. C. Martin .....Mocksville.

Byerly, A. B., Cooleemee Univ. Coll. Med., Va., 1896.	1896	1904
Copple, T. M., Cooleemee Univ. Md., 1900.	1899	1904
Hartley, H. H., Fork Church Univ. Nashville, 1900.	....	1904
*Kimbrough, M. D., Mocksville Univ. Pa., 1860.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
*Martin, W. C., Mocksville P. & S., Balto., 1888.	1888	1904
Rierson, R. L., Cooleemee Univ. N. Y., 1887.	1898	1898
*Rodwell, J. W., Mocksville P. & S., Balto., 1896.	1895	1896

DUPLIN COUNTY SOCIETY.

President, John M. Faison ..... Faison.
Secretary, B. R. Graham ..... Wallace.

Carroll, J. W., Wallace Univ. Md., 1903.	1903	1903
Faison, John M. Faison Univ. Va., 1885.	1885	1885
Graham, B. R., Wallace Univ. Va., 1895.	1895	1899
Hussey, L., Warsaw Univ. Pa., 1853.	....	1904
Jones, A. J., Kenansville Wash. Univ. Md., 1868.	1880	1904
*Murphy, J. Gerald, Kenansville	....	1905
*Smith, O. F., Magnolia Univ. Coll. Med., 1899.	1899	1904
Williams, A. F., Kenansville Univ. Md., 1901.	1901	1904
Williams, J. M., Warsaw Univ. Md., 1902.	1902	1902

DURHAM COUNTY SOCIETY.

*President, N. M. Johnson ..... Durham.
*Secretary, W. A. Graham ..... East Durham.

Boddie, N. P., Durham P. & S., Balto., 1883.	1883	1883
Carr, John R., Durham Johns Hopkins, 1904.	....	1904
Cheatham, Arch., Durham Univ. Md., 1888.	1888	1888
*Graham, W. A., Durham Univ. Pa., 1899.	1901	1901
*Hicks, C. S., Durham Univ. Md., 1904.	1904	1904
Adams, C. A., Durham Coll. P. & S., Balto., 1892.	1892	1905

Members and Address.	*Licensed.*	*Joined State Society.*
Hicks, W. N., Durham Med. Coll. Va., 1864.	....	1901
*Holloway, R. L., West Durham Med. Coll. Va., 1893.	1893	1904
Holt, E. M., Willardsville Univ. N. Y., 1856.	....	1904
Holt, W. P., Willardsville Jeff. Med. Coll., 1895.	1895	1901
*Johnson, N. M., Durham Wash. Univ. Md., 1876.	1879	1904
Jordan, A. C., East Durham Coll. P. & S., Balto., 1881.	1885	1904
*Mann, T. A., Durham Univ. Md., 1903.	1903	1903
*Manning, J. M., Durham Bellevue Med. Coll., 1882.	1884	1891
Nichols, R. E. Gorman Med. Coll. Va., 1890.	1890	1904
*O'Kelly, J. M., Durham Ky. School Med., 1877.	....	1883
*Patterson, E. C., West Durham Univ. Md., 1903.	1903	1903
*Ross, Geo. H., East Durham Univ. Tenn., 1899.	1899	1904
Smith, J. A., Durham Univ. N. Y., 1883.	1884	1905
Ward, M. P., Holloway	....	1904
Wilson, H. F., Morrisville Univ. Ga., 1891.	1902	1904

EDGECOMBE COUNTY SOCIETY.

President, R. L. Savage ..... Conetoe.
Secretary, S. N. Harrell ..... Tarboro.

*Baker, J. M., Tarboro Univ. Md., 1879.	1879	1879
Carr, J. B., Old Sparta Univ. Md., 1885.	1885	1885
Harrell, S. N., Tarboro Univ. Md., 1897.	1897	1904
Killebrew, C. B., Rocky Mount Univ. Pa., 1870.	....	1904
Mercer, W. P., Elm City Univ. N. Y., 1879.	1879	1904
Pitt, M. B., Old Sparta Univ. Pa., 1869.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Savage, R. L., Conetoe Univ. Md., 1897.	1897	1904
Speight, R. H., Whittakers Univ. Md., 1870.	1875	1875
Staton, L. L., Tarboro Univ. N. Y., 1867.	1869	1900
Thigpen, W. J., Tarboro Jeff. Med. Coll., 1900.	1901	1901
Walton, C. B., Macclesfield P. & S., Balto., 1893.	1893	1904

FORSYTH COUNTY SOCIETY.

*President, H. T. Bahnson ..... Winston.
*Secretary, R. D. Jewett ..... Winston.

Ashworth, W. C., Kernersville Coll. P & S., Balto., 1892.	1892	1904
*Bahnson, H. T., Winston Univ. Pa., 1867.	1869	1869
Bynum, John, Winston Univ. N. Y., 1892.	1892	1896
*Bynum, Wade H. Winston Univ. Coll. Med., Va., 1900.	1900	1900
*Copple, T. M., Winston	....	1905
*Dalton, D. N., Winston Univ. N. Y., 1881.	1885	1886
*Dalton, W. N., Tobaccoville	....	....
Davis, A. P., Winston Ky. School Med., 1894.	1896	1904
Davis, J. W., Vienne Med. Coll., Va., 1903.	1903	1905
*Edwards, A. D., Winston N. C. Med. Coll., 1904.	1904	1905
Fearrington, J. P., Winston Univ. Md., 1887.	1887	1904
Fulp, E., Walnut Cove Univ. N. Y., 1882.	....	1896
*Haines, J. L., Winston Univ. Md., 1902.	1902	1902
*Jewett, R. D., Winston Univ. Va., 1888.	1890	1890
Kapp, H. H., Winston Jeff. Med. Coll., 1901.	1901	1904
*Linville, A. Y., Winston Univ. N. Y., 1889.	1889	1896
*Linville, W. C., Kernersville Univ. Md., 1903.	1903	1903

Members and Address.	*Licensed.*	*Joined State Society.*
*Lockett, E. A., Winston Univ. Pa., 1902.	1904	1904
*Lott, H. S., Winston Univ. Ga., 1884.	1888	1888
*Pfohl, S. F., Winston Univ. Pa., 1894.	1898	1898
*Rierson, Robt. L., Winston	....	....
Shaffner, J. F., Winston Jeff. Med. Coll., 1860.	....	1867
Shaffner, J. F., Jr., Winston Univ. Pa., 1899.	1900	1903
*Spainhour, E. H., Winston Balto. Med. Coll., 1898.	1898	1898
*Spencer, W. O., Winston Jeff. Med. Coll., 1891.	1891	1894
*Strickland, E. F., Bethania Univ. N. Y., 1887.	1887	1903
Summers, C. L., Winston Univ. Md., 1887.	1891	1896
*Williams, J. D., Lewisville Vanderbilt Univ., 1898.	1898	1898
*Wright, J. Thos., Winston P. & S., Balto., 1892.	1892	1904

FRANKLIN COUNTY SOCIETY.

President, J. E. Malone.....Louisburg.
*Secretary, S. P. Burt .....Louisburg.

*Burt, S. P., Louisburg P. & S., Balto., 1896.	1896	1904
Clark, K. M., Kittrell, R. F. D.	....	1905
Floyd, R. P., Louisburg, R. F. D. Med. Coll., S. C.	....	....
Harris, J. H., Franklinton Bellevue Med. Coll., 1886.	1886	1904
Hatch, P. R., Youngsville University Louisville, 1880.	....	1904
Henderson, R. B., Franklinton Univ. Md., 1887.	1887	1904
Malone, J. E., Louisburg Bellevue Med. Coll., 1875.	....	1904
Mann, J. J., Stallings Non-graduate Balto. Med. Coll.	1886	1904
Riddick, I. G., Youngsville Bellevue Med. Coll., 1886.	1886	1904
*Reitzel, C. E., Youngsville P. & S., Atlanta, 1902.	1902	1902

Members and Address.	*Licensed.*	*Joined State Society.*
Wheless, J. R., Centreville P. & S., Balto., 1891.	1891	1904
Winston, A. R., Franklinton Bellevue Med. Coll., 1899.	1899	1900
*Yarborough, R. F., Louisburg Columbian Univ., D. C., 1898.	1899	1899

GASTON COUNTY SOCIETY.

President, J. B. Wallace ..... Mount Holly.
Secretary, S. A. Wilkins ..... Dallas.

Adams, C. E., Gastonia Univ. Md., 1878.	1885	1904
*Anders, McT. G., Gastonia Md. Med. Coll., 1901.	1902	1902
*Boyte, E. C., Mount Holly Balto. Med. Coll., 1893.	1898	1898
Bunting, R. C., Gastonia Univ. Md., 1898.	1897	1904
Davis, W. W., Belmont Ky. School Med., 1875.	....	1904
Eddleman, H. M., Gastonia Ky. School Med., 1886.	....	1904
Garrison, D. A., Bessemer City Louisville Med. Coll., 1896.	1896	1899
Glenn, H. F., Gastonia P. & S., Atlanta, 1900.	1900	1904
Glenn, L. N., McAdensville Univ. Md., 1897.	1897	1904
Hay, W. S., Bessemer City Univ. Ga., 1890.	1895	1904
*Hunter, B. R., Kings Mountain Louisville Med. Coll., 1896.	1897	1904
Hunter, M. C., Stanley P. & S., Balto., 1882.	1882	1904
*Jenkins, J. H., Dallas Ky. School Med., 1888.	1888	1904
*Mathewson, J. P., Taylorsville N. C. Med. Coll., 1902.	1902	1902
McLean, Chas. E., Morganton N. C. Med. Coll., 1903.	1904	1905
Patrick, G. R., Lowell Univ. Md., 1879.	....	1904
*Quickel, T. C., Stanley Tulane Univ., 1899.	1899	1904

Members and Address.	*Licensed.*	*Joined State Society.*
*Reid, R. M., Gastonia Univ. N. Y., 1890.	1890	1903
Robinson, Frank Lowell Louisville Med. Coll., 1878.	1881	1904
Sloan, J. M., Gastonia Louisville Med. Coll., 1891.	1891	1904
Strong, W. M., Belmont N. C. Med. Coll., 1904.	1904	1905
*Twitty, J. C., Gastonia Balto. Med. Coll., 1892.	1892	1904
Wallace, J. B., Mt. Holly Univ. Md., 1897.	1897	1904
Wilkins, S. A., Dallas Univ. Ky., 1902.	1903	1903
*Wilson, F. G., Gastonia Univ. Md., 1896.	1896	1899

GATES COUNTY SOCIETY.

President, Gus D. Williams.....Gatesville.
*Secretary, George C. Brooks .....Sunbury.

*Brooks, G. C., Sunbury P. & S., Balto., 1884.	....	1904
Corbell, E. F., Sunbury Univ. Md., 1886.	1893	1900
Lee, W. O. P., Reynoldson P. & S., Balto., 1874.	....	1904
Williams, George D., Gatesville P. & S., Balto., 1897.	1897	1904

GRAHAM COUNTY SOCIETY.

President, M. F. Maxwell .....Robbinsville.
*Secretary, R. J. Orr .....Robbinsville.

Brock, G. F., Robbinsville Registered on oath.	....	1904
Howell, S. F., Robbinsville Registered on oath.	....	1904
Hooper, L. D., Robbinsville, R. F. D. Registered on oath.	....	1904
Maxwell, M. F., Robbinsville Southern Med. Coll., 1885.	....	1904
*Orr, R. J., Robbinsville Louisville Med. Coll., 1893.	....	1904

GRANVILLE COUNTY SOCIETY.

*President, S. D. Booth .....Oxford.
*Secretary, Ben. K. Hays .....Oxford.

Members and Address.	*Licensed.*	*Joined State Society.*
*Booth, S. D., Oxford ..... Med. Coll., Va.	1885	1885
*Booth, T. L., Oxford ..... Med. Coll. S. C., 1882.	....	1890
Cannaday, S. H., Oxford ..... Unvi. Va., 1887.	....	1904
Cozart, W. W., Dutchville..... Med. Coll., S. C., 1856.	....	1904
*Hays, Ben. K., Oxford ..... Univ. Coll. Med., Va., 1894.	1894	1896
Meadows, E. B., Oxford R. F. D. ..... Univ. Coll. Med., Va., 1901.	1901	1901
Morris, J. A., Oxford, R. F. D. ..... Vanderbilt Univ., 1893.	1893	1899
Sanderford, J. F., Creedmore ..... P. & S., Balto., 1890.	1890	1891
*Sikes, G. T., Grissom ..... Univ. Md., 1884.	1884	1884
Taylor, W. L., Stovall ..... Univ. Va., 1900.	1901	1905
Williams, J. B., Oxford ..... Univ. Md., 1868.	....	1905

GREENE COUNTY SOCIETY.

President, Albert West .....Speights Bridge, R. F. D.
*Secretary, G. C. Edwards .....Hookerton.

*Edwards, G. C., Hookerton ..... Bellevue Med. Coll., 1883.	1883	1883
Murphy, W. B., Jr., Snow Hill ..... Univ. Coll. Med., Va., 1903.	1903	1905
Palmer, J. R., Hookerton ..... Atlanta Med. Coll., 1894.	1894	1900
Patrick, J. E., Snow Hill..... Univ. Coll. Med., Va., 1900.	1900	1900
*Walker, E. E., Snow Hill..... Med. Coll., Va., 1900.	....	1905
West, Albert, Speights Bridge, R. F. D.....	....	1904
*Whittington, W. W., Bullhead..... Louisville Med. Coll., 1895.	1895	1897

GUILFORD COUNTY SOCIETY.

*President, M. F. Fox.....Guilford College.
*Secretary, Wm. J. Richardson .....Greensboro.

Members and Address.	*Licensed.*	*Joined State Society.*
*Angle, J. B., Greensboro.....	....	1905
*Armfield, D. A., Jamestown..... Jeff. Med. Coll., 1861.	....	1904
Banner, C. W., Greensboro..... Univ. Md., 1899.	1899	1901
*Battle, J. T. J., Greensboro..... P. & S., Balto., 1884.	1884	1889
*Beall, W. P., Greensboro..... Jeff. Med. Coll., 1879.	1879	1879
*Bowman, H. P., Gibsonville.....	....	....
Boyles, J. H., Greensboro..... P. & S., Balto., 1903.	1903	1904
*Broadnax, J. G., Greensboro..... Univ. Va., 1849.	....	1888
*Brooks, J. E., Greensboro..... Univ. Coll. Med., Va., 1897.	1897	1904
*Ector, D. G., Guilford College.....	....	....
*Burrus, John T., High Point..... N. C. Med. Coll., 1898.	1897	1898
*Burton, J. W., High Point..... Wash. Univ., Md., 1872.	....	1904
*Coble, W. A., Brick Church.....	....	1904
Davis, W. C., Summerfield..... Univ. Balto., 1896.	....	1904
*Dodson, H. H., Greensboro ..... Med. Coll., Va., 1882.	1885	1886
Fortune, A. F., Greensboro..... Univ. Coll. Med., 1900.	1900	1904
*Fox, M. F., Guilford College..... P. & S., Balto., 1881.	1885	1885
*Gilmer, C. S., Greensboro..... Univ. N. Y., 1891.	1891	1894
*Gordon, J. R., Jamestown..... Univ. N. Y., 1891.	1891	1894
*Gore, Anna M..... Woman's Med. Coll., N. Y., 1891.	1894	1905
Gray, Claiborn, Pleasant Garden.....	....	1904
*Grimsley, J. E., Greensboro..... Univ. Va., 1883.	1883	1884
*Harris, Joy, (female,) Greensboro..... Woman's Med. Coll., Balto., 1896.	1896	1898
*Harrison, Edmund, Greensboro ..... Univ. Coll. Med., Va., 1896.	1900	1900

Members and Address.	*Licensed.*	*Joined State Society.*
*Hilton, J. J., Stokesdale..... Univ. Md., 1886.	....	1904
*Hughes, George R., Greensboro..... Univ. N. Y., 1888.	1888	1894
*Holt, W. T., McLeansville.....	....	....
Jones, J. W., Brown's Summit..... Missouri Med. Coll., 1875.	....	1904
*Jordan, G. E., Gibsonville..... P. & S., Balto., 1891.	1891	1904
Kernodle, G. W., Greensboro..... P. & S., Balto., 1886.	....	1905
*Knight, W. P., Greensboro..... Balto. Med. Coll., 1898.	1898	1898
*Ledbetter, A. E., Greensboro..... Univ. Md., 1888.	1888	1904
*Little, Thos. R., Greensboro..... Univ. Pa., 1900.	1903	1903
*Long, John W., Greensboro..... Vanderbilt Univ., 1883.	1884	1884
Leagan, Jno. E., Greensboro..... Juffney Coll., ...	....	1905
*Matthews, J. B., Greensboro..... Med. Coll., Va., 1896.	1896	1904
McAnally, W. J., High Point..... Bal. Med. Coll., 1897.	1896	1899
Meadows, W. J., Greensboro..... Med. Coll., Ala., 1894.	1899	1904
*Michaux, E. R., Greensboro..... Univ. N. Y., 1889.	1889	1904
Miles, Maj., Greensboro.....	....	1905
Moore, J. L., High Point..... P. & S., Balto., 1886.	1886	1901
*Paddison, J. R., Oak Ridge..... Univ. Md., 1902.	1902	1904
*Reitzel, J. R., High Point..... Univ. Tenn., 1892.	1895	1896
*Reives, J. T., Greensboro..... Louisville Med. Coll., 1891.	1892	1904
*Richardson, W. J., Greensboro..... Jeff. Med. Coll., 1889.	1889	1904
*Roberson, Chas., Greensboro..... Long Island Med. Coll., 1897.	1897	1901
*Scott, C. L., Greensboro..... Univ. Md., 1897.	1899	1903
*Stamey, E. L., Greensboro..... Atlanta Med. Coll., 1895.	1895	1904
*Stanton, D. A., High Point..... Vanderbilt Univ., 1887.	1887	1891

Members and Address.	*Licensed.*	*Joined State Society.*
*Swain, J. F., High Point	....	1905
*Thames, John, Greensboro Louisville Med. Coll., 1894.	1895	1895
Turner, J. A., High Point Louisville Med. Coll., 1886.	....	1891
*Turner, J. P., Greensboro Univ. Md., 1896.	1897	1904
*Vestal, W. L., High Point P. & S., Balto., 1883.	....	1905
*Wilson, A. R., Greensboro Jeff. Med. Coll., 1882.	1882	1882
*Williams, John Roy, Greensboro Univ. Mich., 1903.	1904	1904

HALIFAX COUNTY SOCIETY.

President, John A. Collins.....Enfield.
Secretary, A. S. Harrison.....Enfield.

Collins, John A., Enfield Bellevue Med. Coll., 1869.	1880	1904
Ferguson, H. B., Halifax Jeff. Med. Coll., 1882.	1882	1904
Green, I. E., Weldon	1873	1904
Harrison, A. S., Enfield Univ. Md., 1888.	1888	1904
Leggett, K., Hobgood Ky. School Med., 1884.	1885	1885
*Pierce, S. B., Roanoke Rapids Bellevue Med. Coll., 1897.	1897	1905
*Register, F. M., Tillery Ky. School Med., 1893.	1891	1904
Zollicoffer, A. B., Weldon Univ. Pa., 1875.	....	1904
Zollicoffer, D. B., Weldon P. & S., Balto., 1886.	1886	1904

HARNETT COUNTY SOCIETY.

President, C. H. Sexton.....Dunn.
*Secretary, I. F. Hicks .....Dunn.

Denning, O. L., Dunn Jeff. Med. Coll., 1889.	1889	1904
Harper, M. W., Dunn Louisv. Med. Coll., 1886.	....	1886
Halford, J. W., Chalybeate Springs	....	....
*Hicks, I. F., Dunn N. C. Med. Coll., 1902.	1902	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Highsmith, Chas., Dunn..... Balto. Med. Coll., 1898.	1898	1898
*Holt, W. P., Duke..... Jeff. Med. Coll., 1895.	1895	1901
Hudson, W. L., Dunn..... Ky. School Med., 1876.	1883	1894
*Lee, S. P. J., Dunn, R. F. D..... Md. Med. Coll., 1904.	1904	1905
McKay, A. M., Summersville..... S. C. Med. Coll., 1858.	....	1905
McKay, Jno. A., Dunn, R. F. D. No. 2..... S. C. Med. Coll., 1856.	....	1904
*McKay, J. F., Buie's Creek..... S. C. Med. Coll., 1884.	....	1904
McLean, J. W., Godwin..... N. C. Med. Coll., 1902.	1902	1902
McNeill, Wm. M., Dunn..... Univ. N. Y., 1858.	....	1904
Melvin, W. C., Linden..... Univ. Coll. Med., Va., 1900.	1900	1905
Moore, F. T., Benson..... P. & S., Balto., 1885.	....	1904
Sexton, C. H., Dunn..... Univ. Md., 1890.	1890	1904
Smith, F., Linden..... S. C. Med. Coll., 1868.	....	1905

HAYWOOD COUNTY SOCIETY.

*President, F. M. Davis.....Clyde.
*Secretary, J. Howell Way.....Waynesville.

Abel, J. F., Waynesville..... Univ. Balto., 1892.	1893	1899
Allen, R. L., Waynesville..... Univ. Md., 1885.	1885	1899
*Davis, F. M., Clyde..... Vanderbilt Univ., 1894.	1894	1904
*McCracken, J. R., Waynesville..... N. C. Med. Coll., 1902.	1902	1903
*McFadyen, H. L., Waynesville..... Univ. N. Y., 1876.	....	1904
Kirkpatrick, Wm. L., Pacolet, S. C..... Vanderbilt Univ., 1894.	1894	1895
Mease, J. H., Canton..... Vanderbilt Univ., 1893.	1893	1894
Medford, S. B., Clyde..... Univ. Nash., Tenn., 1896.	1896	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Rogers, McLean, Geary, Okla. P. & S., Atlanta, 1902.	1902	1903
*Stringfield, Thos., Waynesville Vanderbilt Univ., 1898.	1898	1899
Walker, R. L., Clyde. Ky. School Med., 1889.	....	1904
*Way, J. Howell, Waynesville. Vanderbilt Univ., 1886.	1885	1887
Wilson, J. E., Sonoma. Ico. Louisville Med. Coll., 1876.	....	1903

HENDERSON-POLK COUNTY SOCIETY.

President, J. G. Waldrop.....Hendersonville.
Secretary, W. M. Jones.....Hendersonville.

Allen, T. A., Hendersonville. S. C. Med. Coll.	....	1904
Drafts, A. B., Hendersonville. Univ. Va., 1896.	1899	1903
Edgerton, J. L., Hendersonville. Univ. Md., 1877.	....	1890
Few, C., Hendersonville. Univ. Md., 1875.	....	1904
Goelet, E. B., Saluda. Tulane Univ., 1888.	1888	1888
Grady, Earle, Tryon Univ. Md., 1894.	1895	1899
Greenwood, S. E., Mills River. Tenn. Med. Coll., 1902.	1903	1904
Guerard, Arthur R., Flat Rock. Bellevue Med. Coll., 1895.	1902	1905
Jones, Wm. M., Hendersonville. Univ. Ind., 1903.	1903	1905
Kirk, Wm. R., Hendersonville. Central Univ. of Ky., 1890.	1901	1903
Russell, Lloyd P., Fletchers. Univ. Nashville, 1901.	1902	1903
Waldrop, J. G., Hendersonville. P. & S., Balto., 1876.	....	1891

HERTFORD COUNTY SOCIETY.

President, W. G. Freeman.....Murfreesboro.
*Secretary, J. Rainey Parker.....Union.

Burbage, T. J., Como. Memphis Hosp. Coll. Med., 1882.	....	1905
Freeman, W. G., Murfreesboro. Univ. Pa., 1861.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Gary, R. H., Murfreesboro P. & S., Balto., 1881.	....	1904
Green, A. W., Ahoskie Univ. Coll. Med., Va., 1904.	1904	1905
Griffin, C. F., Winton P. & S., Balto., 1893.	1893	1900
Mitchell, J. H., Ahoskie P. & S., Balto., 1879.	....	1904
*Parker, J. Rainey, Union Balto. Med. Coll., 1898.	1898	1898
Pollard, W. B., Winton Univ. Pa., 1899.	1903	1905
Ward, J. E., Harrellsville Univ. Md., 1904.	1904	1905

IREDELL-ALEXANDER COUNTY SOCIETY.

President, Albert Houck.....Statesville.
*Secretary, J. E. McLaughlin.....Statesville.

*Adams, M. R., Statesville Univ. Md., 1878.	1884	1884
Allen, J. A., Cool Spring Univ. Coll. Med., Va., 1901.	1901	1904
*Anderson, Thos. E., Statesville Jeff. Med. Coll., 1878.	1879	1879
Bell, A. E., Mooresville Univ. Md., 1899.	1897	1904
Campbell, Archibald, Statesville Univ. Md., 1891.	1891	1905
Carson, C. J., Taylorsville	....	1904
Cloninger, L. V., Elmwood N. C. Med. Coll., 1901.	1901	1904
Hall, E. A., Dunlap	....	1904
Harrill, L., Statesville	....	1900
Houck, Albert, Statesville P. & S., Balto., 1884.	1891	1893
*Jurney, P. C., Turnersburg Med. Coll., Va., 1901.	1901	1904
King, J. E., Statesville, R. F. D Jeff. Med. Coll., 1868.	....	1904
*Klutz, E. E., Troutman Med. Coll., Va., 1884.	....	1896
*Long, H. F., Statesville Univ. Md., 1892.	1892	1899
*McLaughlin, J. E., Statesville Univ. Md., 1886.	1886	1896

Members and Address.	*Licensed.*	*Joined State Society.*
Moore, J. T., Mooresville, R. F. D. N. C. Med. Coll., 1899.	1898	1905
Moore, N. G., Mooresville Jeff. Med. Coll., 1891.	1891	1904
Nicholson, W. G., Harmony Louisville Med. Coll., 1881.	....	1904
Phifer, F. W., Statesville Univ. Md., 1902.	1902	1904
Sharpe, F. L., Statesville Univ. Coll. Med., 1904.	1904	1905
Skinner, L. C., Island N. C. Med. Coll., 1902.	1902	1902
Sisk, J. A., Harmony N. C. Med. Coll., 1902.	1902	1904
Stevenson, S. W., Mooresville Wash. Univ., Md., 1873.	1879	1904
Young, James, Mooresville Non-graduate N. C. Med. Coll.	1896	1904
*Yount, E. M., Statesville N. C. Med. Coll., 1902.	1902	1902

JACKSON COUNTY SOCIETY.

President, Wm. Self.....Webster.
Secretary, A. A. Nichols.....Painter.

Burgin, H. F., Webster Univ. Md., 1874.	1879	1904
Candler, Chas. Z., Dillsboro P. & S., Atlanta, 1901.	1901	1904
Candler, J. M., Dillsboro	....	1904
Edwards, Geo. P., Sylva Univ. Ga., 1902.	1902	1904
*Hooper, D. D., Tuckaseigee Univ. Coll. Med., Va., 1905.	1905	1905
Nichols, A. A., Painter Univ. Nashville, 1898.	1904	1904
Self, Wm., Webster	....	1904

JOHNSTON COUNTY SOCIETY.

President, Geo. J. Robinson.....Smithfield.
Secretary, Thel. Hooks.....Smithfield.

Grady, J. C., Kenley P. & S., Balto., 1886.	....	1904
Griffin, J. A., Clayton	....	1905

Members and Address.	*Licensed.*	*Joined State Society.*
Hooks, Thel., Smithfield Med. Coll. Va., 1901.	1901	1903
Johnson, Floyd, Benson Memphis Hosp. Coll. Med., 1903.	1903	1904
Justice, Jas. F., Kenly	1904	1905
Lassiter, D. B., Benson	....	1904
Munns, L. A., Smithfield P. & S., Balto., 1885.	1888	1904
Moore, F. T., Benson	....	1904
Noble, R. J., Selma Ky. School Med., 1875.	1878	1878
Parker, G. E., Benson P. & S., Balto., 1886.	....	1904
Person, J. B., Selma Med. Coll. Va., 1897.	1897	1900
Robinson, G. J., Smithfield Jeff. Med. Coll., 1882.	1884	1884
*Wharton, L. D., Smithfield Tulane Univ., 1893.	1893	1894
[illegible]ayton P. & S., Balto., 1897.	**1896**	**1904**

LENOIR COUNTY SOCIETY.

President, C. B. Woodley.....Kinston.
*Secretary, W. F. Hargrove.....Kinston.

Green, J. C., LaGrange Med. Coll., Va., 1900.	1900	1904
*Hargrove, W. F.. Kinston Univ. Md., 1901.	1901	1901
Hodges, J. M., LaGrange Bellevue Med. Coll., 1883.	1883	1904
Monk, H. G., Trenton Med. Coll., Va., 1896.	1896	1904
*Parrott, Jas. M., Kinston Tulane Univ., 1895.	1895	1896
Parrott, W. T., Kinston Tulane Univ., 1899.	1899	1901
Pridgen, C. L., Kinston Jeff. Med. Coll., 1901.	1901	1904
Smithwick, J. W. P., LaGrange Univ. Md., 1895.	1897	1898
Tull, Henry, Kinston Univ. Pa., 1876.	1876	1876
*Whittaker, R. A., Kinston P. & S., Balto., 1885.	1885	1885

Members and Address.	*Licensed.*	*Joined State Society.*
Woodley, C. B., Kinston Bellevue Med. Coll., 1886.	1886	1904
Wootten, R. W., Kinston Univ. Va., 1870.	....	1904

LINCOLN COUNTY SOCIETY.

President, R. B. Killian.....Lincolnton, R. F. D.
Secretary, L. A. Crowell.....Lincolnton.

Abernethy, H. N., Denver Louisville Med. Coll., 1894.	1894	1898
Brom, J. L., Crouse Balto. Med. Coll., 1904.	1904	1905
Crowell, L. A., Lincolnton Balto. Med. Coll., 1892.	1892	1898
Hoover, Chas. H., Lincolnton, R. F. D Balto. Med. Coll., 1903.	1903	1904
Hunter, J. McK., Hunter Louisv. Med. Coll., 1896.	1902	1905
Killian, R. B., Lincolnton, R. F. D Louisville Med Coll., 1885.	1885	1904
Kiser, W. C., Reepsville Sou. Med. Coll., Ga., 1889.	....	1904
*Petrie, R. W., Lincolnton Univ. Md., 1903.	1903	1903
Saine, John W., Lincolnton Louisville Med. Coll., 1891.	1891	1904
Thompson, C. D., Lowesville Univ. Tenn., 1901.	1901	1904
Wise, J. S., Lincolnton Ky. School Med., 1890.	1899	1904

MACON COUNTY SOCIETY.

President, S. H. Lyle.....Franklin.
Secretary, W. A. Rogers.....Franklin.

Browner, J. A., Aquone	....	1904
Lyle, S. H., Franklin Vanderbilt Univ., 1882.	1881	1904
Rogers, W. A., Franklin Univ. Nashville, 1898.	1898	1898
*Siler, F. L., Franklin Univ. Nashville, 1897.	1895	1904

MADISON COUNTY SOCIETY.

President, J. C. Tilson.....Halewood.
*Secretary, S. B. Woody.....Spring Creek.

Members and Address.	*Licensed.*	*Joined State Society.*
Baird, J. H., Mars Hill.....	....	1904
Burnett, I. E., Big Laurel.....	....	1904
English, I. L., English.....	....	1904
Frisbee, J. T., Lynch.....	....	1904
*Roberts, Frank, Marshall..... Jeff. Med. Coll., 1892.	1892	1902
Tilson, J. C., Halewood..... Ico. P. & S., Balto., 1881.	1885	1905
Robinson, W. F., Mars Hill..... Vanderbilt Univ., 1896.	1903	1904
Tilson, J. C., Halewood..... Ico. P. & S., Balto., 1884-5.	1885	1904
Weaver, W. J., Marshall..... Jeff. Med. Coll., 1898.	1897	1903
*Woody, S. B., Spring Creek..... Vanderbilt Univ., 1892.	1898	1898

MARTIN COUNTY SOCIETY.

President, B. L. Long.....Hamilton.
*Secretary, J. B. H. Knight.....Williamston.

Hargrove, W. H., Robersonville..... Univ. Md., 1877.	1879	1879
Harrell, W. H., Williamston..... Med. Coll., Va., 1885.	1885	1890
*Knight, J. B., Williamston..... P. & S., Balto., 1885.	1885	1891
Long, B. L., Hamilton..... Univ. Md., 1880.	....	1904
Nelson, R. J., Robersonville..... Louisville Med. Coll., 1890.	1890	1893
*Proctor, J. P., Williamston.....	1905	1905
Smithwick, J. E., Jamesville..... Univ. Md., 1897.	1897	1904
Warren, W. E., Williamston..... Non-Graduate Univ. N. Y.	1893	1904

McDOWELL COUNTY SOCIETY.

President, B. A. Cheek.....Marion.
Secretary, G. S. Kirby.....Marion.

Members and Address.	*Licensed.*	*Joined State Society.*
Ashworth, B. L., Marion..... P. & S., Balto., 1892.	1893	1895
Cheek, B. A., Marion..... Univ. Pa., 1860.	....	1904
Doster, J. L., Nealsville.....	....	1904
Garren, R. H., Old Fort..... Univ. Nashville, 1900.	1901	1904
Gilbert, W. W., Rocky Pass.....	....	1904
Justice, M. L., Old Fort..... Non-Graduate N. C. Med. Coll.	1897	1904
Kirby, Guy S., Marion..... Univ. Coll. Med., Va., 1897.	1897	1903
*Morphew, M. F., Marion..... P. & S., Balto., 1883.	....	1893
Moore, J. E., Old Fort..... Tenn. Med. Coll., 1899.	1898	1899

MECKLENBURG COUNTY SOCIETY.

President, Lester W. Hunter.....Sardis.
Secretary, Parks M. King.....Charlotte.

Abernethy, J. S., Charlotte, R. F. D.....	....	1904
*Alexander, Annie L., Charlotte..... Woman's Med. Coll., Pa., 1884.	1885	1885
*Alexander, J. R., Charlotte..... Univ. Md., 1894.	1894	1898
Alexander, Henry Q., Matthews..... Univ. Md., 1888.	1888	1904
Austin, J. A., Charlotte..... Jeff. Med. Coll., 1887.	1887	1877
Brevard, R. J., Charlotte..... Univ. N. Y., 1872.	....	1887
Bruner, J., Matthews	....	1904
Craven, W. P., Charlotte, R. F. D.....	....	1904
*Crowell, A. J., Charlotte..... Univ. Md., 1893.	1892	1894
Crowell, S. M., Charlotte..... Univ. Md., 1895.	1895	1898
De Armond, J. C., Mint Hill..... Univ. Md., 1886.	1886	1887
*Davidson, J. E., Huntersville.....	....	....

Members and Address.	*Licensed.*	*Joined State Society.*
*Faison, I. W., Charlotte Bellevue Med. Coll., 1878.	1878	1878
*Gibbon, Robt. L., Charlotte Jeff. Med. Coll., 1887.	1887	1890
*Graham, Joseph, Charlotte Jeff. Med. Coll., 1869.	....	1874
Graham, W. A., Charlotte P. & S. N. Y., 1888.	1889	1890
Hawley, F. O., Charlotte Univ. Edinburgh, Scot., 1868.	....	1904
Henderson, S. M., Croft Univ. Md., 1894.	1894	1904
Herron, A. M., Charlotte, R. F. D Med. Coll., S. C., 1882.	....	1904
Hunter, Lester W., Sardis Bellevue Med. Coll., 1875.	1880	1880
*Irwin, John R., Charlotte Univ. Md., 1879.	1882	1882
King, Parks M., Charlotte Univ. and Bellevue, N. Y., 1902.	1902	1904
Knox, John, Ranalburg	....	1904
Littlejohn, R. N. Charlotte Univ. Md., 1903.	1903	1904
*Mason, R. E., Charlotte Univ. Ga., 1900.	1903	1904
McLaughlin, C. S., Charlotte Univ., 1896.	1896	1903
McManaway, C. G., Charlotte	....	....
Meisenheimer, C. S., Charlotte Univ. N. Y., 1882.	1882	1882
*Montgomery, John C., Charlotte Univ. N. Y., 1891.	1891	1895
*Moore, B. S., Charlotte	1905	1905
*Munroe, H. S., Davidson N. C. Med. Coll., 1902.	1902	1904
Munroe, J. P., Davidson Univ. Va., 1885.	1886	1890
*Nisbet, W. O., Charlotte Med. Coll., S. C., 1889.	1889	1899
Nolle, Brodie C., Charlotte	1905	1905
Pharr, W. W., Newells P. & S., Balto., 1881.	1885	1885
*Pressly, George W., Charlotte Jeff. Med. Coll., 1892.	1895	1896
*Register, E. C., Charlotte Univ. N. Y., 1885.	1885	1887

Members and Address.	*Licensed.*	*Joined State Society.*
Reid, Thos. N., Matthews Univ. N. Y., 1891.	1891	1904
Russell, E. Reid, Charlotte Univ. Md., 1895.	1895	1898
Stephenson, C. B., Charlotte Tulane Univ., La., 1891.	1898	1904
*Strong, C. M., Charlotte Univ. Md., 1888.	1889	1898
*Wakefield, W. H., Charlotte Hosp. Coll. Med., Ky., 1890.	1891	1893
Walker, C. E., Charlotte Univ. Md., 1891.	1891	1894
*Whisnant, A. M., Charlotte P. & S., Balto., 1893.	1893	1894
*Winchester, F. M., Charlotte Jeff. Med. Coll., 1883.	1887	1904
*Withersbee, W. D., Charlotte	1905	1905
Wilder, H. M., Charlotte Univ. N. Y., 1872.	1874	1904
Woodley, W. T., Charlotte Med. Coll., Va., 1893.	....	1904

MOORE COUNTY SOCIETY.

President, K. M. Ferguson.....Southern Pines.
Secretary, Gilbert McLeod .....Carthage.

Achorn, J. Warren, Boston, Mass Maine Med. Coll., 1887.	1899	1899
*Caveness, A. H., High Falls Univ. Balto., 1901.	1903	1905
Ferguson, K. M., Southern Pines P. & S., Balto., 1882.	1883	1904
Gladmon, Edwin, Southern Pines National Univ., Washington, D. C., 1890.	1899	1902
*Gilmore, W. D., Cameron Univ. N. C., 1903.	1903	1904
Hoyle, H. B., Jonesboro N. C. Med. Coll., 1896.	1896	1904
*McIver, Lynn, Sanford Univ. Ky., 1901.	1902	1903
McLeod, A. H., Aberdeen Balto. Med. Coll., 1896.	1896	1904
McLeod, Gilbert, Carthage Univ. Md., 1882.	1885	1904
Monroe, A. J., Jonesboro Univ. N. Y., 1858.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
*Monroe, J. P., Sanford P. & S., Balto., 1901.	1901	1903
Monroe, W. A., Sanford Univ. Md., 1886.	1886	1888
*Palmer, R. W., Gulf Louisville Med. Coll., 1890.	1891	1891
Roberson, R. M., Cumnock Univ. Coll., Med., 1899.	1899	1904
*Shields, H. B., Carthage Atlanta Med. Coll., 1887.	1887	1904
Snipes, E. P., Jonesboro Vanderbilt Univ., 1890.	....	1890
*Street, M. E., Glendon P. & S., Balto., 1893.	1893	1902
Swett, W. P., Southern Pines Univ. Vermont, 1876.	....	1901

MONTGOMERY COUNTY SOCIETY.

*President, F. E. Asbury.....Asbury.
Secretary, C. B. Ingram.....Mount Gilead.

Allen, ..., Star	....	1904
*Asbury, F. E., Asbury Med. Coll. S. C., 1876.	....	1896
Blair, M. P., Troy Med. Coll. Va., 1895.	1895	1904
*Bowman, H. E., Biscoe	....	....
Dowd, J. A., Biscoe N. C. Med. Coll., 1902.	....	1904
Ingram, C. B., Mount Gilead Jeff. Med. Coll., 1886.	1886	1892
*Shamberger, J. B., Star Univ. Md., 1890.	1890	1892
Thompson, F. A., Troy Med. Coll. Indiana, 1895.	1895	1904

NASH COUNTY SOCIETY.

President, J. P. Battle.....Nashville.
Secretary, J. P. Whitehead.....Rocky Mount.

Battle, Jas. P., Nashville Univ. Md., 1888.	1889	1904
Brantley, C. H., Finch P. & S., Balto., 1887.	1894	1904
Brantley, Hassell, Spring Hope Univ. Md., 1888.	1888	1901

Members and Address.	*Licensed.*	*Joined State Society.*
Carrington, L. C., Rocky Mount Univ. Coll. Med., Va., 1901.	1902	1902
Dew, S. P., Spring Hope	....	....
Marriott, H. B., Battleboro Univ. Md., 1883.	1883	1904
Matthews, T. A., Castalia Univ. Md., 1891.	1891	1895
Miller, Robt. B., Rocky Mount Med. Coll. Va., 1898.	1900	1902
*Phillips, Jas. B., Jr., Selma Univ. Md., 1903.	1904	1904
Strickland, J. T., Nashville Univ. Md., 1890.	1890	1904
Whitehead, J. P., Rocky Mount Univ. Md., 1899.	1899	1899
*Whitehead, W. H., Rocky Mount Univ. Md., 1870.	1875	1875
Whittaker, W. H., Hilliardston	....	1905

NEW HANOVER COUNTY SOCIETY.

President, W. D. McMillan ..... Wilmington.
Secretary, S. E. Koonce ..... Wilmington.

Anders, W. K., Wilmington Univ. Philadelphia, Pa., 1870.	1880	1904
Bell, Charles D., Wilmington Univ. Md., 1883.	....	1904
Bellamy, W. J. H., Wilmington Univ. N. Y., 1868.	....	1870
Bellamy, R. H., Wilmington Jeff. Med. Coll., 1902.	1902	1902
Bausneman, J. H., Wilmington Jeff. Med. Coll., 1903.	1904	1905
Bullock, D. W., Wilmington Univ. Md., 1873.	1875	1875
Burbank, T. S., Wilmington Bellevue Med. Coll., 1886.	1880	1904
Collier, G. K., Sonyea, N. Y. P. & S., Balto., 1900.	1902	1902
Galloway, W. C., Wilmington Wash. Univ. of Md., 1874.	1880	1880
Green, Thos. M., Wilmington Univ. Md., 1901.	1901	1904
Hall, Wright, Wilmington Non. graduate P. & S., Balto.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Harris, A. H., Wilmington Medico-Chi. Coll., Pa., 1893.	1892	1904
Harper, Chas. T., Wilmington Univ. Md., 1894.	1893	1904
Koonce, S. E., Wilmington P. & S., Balto., 1896.	1896	1900
McDonald, A. D., Wilmington Wash. Univ. of Md., 1877.	1877	1879
Love, L. H., Wilmington P. & S., N. Y., 1898.	1899	1904
Love, Wm. J., Wilmington Med. Coll. of S. C., 1861.	1861	1870
McMillan, W. D., Wilmington Univ. Md., 1868.	....	1904
*Russell, F. H., Wilmington Univ. Md., 1893.	1893	1895
Schonwald, Jno. T., Wilmington Long Island Med. Coll., 1879.	1880	1904
*Thomas, Geo. G., Wilmington Univ. Md., 1871.	1871	1871
Thomas, Pridge J., Wilmington Univ. Md., 1902.	1902	1902
Wood, Ed. Jenner, Wilmington Univ. Pa., 1902.	1903	1903

NORTHAMPTON COUNTY SOCIETY.

President, A. J. Ellis ..... Garysburg.
Secretary, R. P. Morehead ..... Lasker.

Bolton, Maryland, Rich Square Jeff. Med. Coll., 1885.	1885	1885
*Coppedge, N. P., Margaretsville N. C. Med. Coll., 1903.	1903	1903
Ellis, A. J., Garysburg Univ. Pa., 1858.	....	1904
Joyner, R. W., Woodland	....	1904
*Lewis, H. W., Jackson Univ. N. Y., 1877.	....	1887
Moorehead, R. P., Lasker P. & S., Balto., 1895.	1895	1900
Robinson, W. A., Garysburg Univ. Coll. Med., Va., 1900.	1903	1904
Stancill, R. H., Margaretsville Med. Coll. Va., 1865.	....	1887
Stephenson, M. R., Seaboard Univ. Md., 1881.	....	1904
Valentine, Thos., Vultare	....	1904

ONSLOW COUNTY SOCIETY.

*President, Cyrus Thompson ..... Jacksonville.
Secretary, E. L. Cox ..... Jacksonville.

Members and Address.	*Licensed.*	*Joined State Society.*
Blount, F. H., Swansboro		1904
Cox, E. L., Jacksonville ..... Univ. Md., 1889.	1889	1892
Dudley, G. J., Sneads Ferry ..... Univ. Md., 1898.	....	1904
Montford, W. J., Wards Mills ..... Jeff. Med. Coll., 1857.	....	1904
*Nicholson, J. L., Richlands ..... Univ. N. Y., 1875.	1880	1880
*Thompson, Cyrus, Jacksonville ..... Tulane Univ., La.	....	1904

ORANGE COUNTY SOCIETY.

President, I. H. Manning ..... Chapel Hill.
*Secretary, C. D. Jones ..... Hillsboro.

Abernethy, E. A., Chapel Hill ..... Univ. Coll. Med., Va., 1901.	1901	1905
Hester, J. R., Prospect Hill ..... Univ. Tenn.	....	1894
Hughes, C. M., Cedar Grove ..... Atlanta Med. Coll., 1897.	1901	1904
*Jones, C. D., Hillsboro ..... Vanderbilt Univ., 1887.	1891	1901
Manning, I. H., Chapel Hill ..... Long Island Med. Coll., 1887.	1899	1901
Mangum, C. S., Chapel Hill ..... Jeff. Med. Coll., 1894.	1896	1898
*Murphy, W. E., Carr ..... Louis. Med. Coll., 1876.	....	1904
Parris, D. C., Hillsboro ..... Atlanta Med. Coll., 1882.	1885	1887
*Whitehead, R. H., Chapel Hill ..... Univ. Va., 1888.	1889	1891

PAMLICO COUNTY SOCIETY.

President, Geo. S. Attmore ..... Stonewall.
Secretary, H. P. Underhill ..... Bayboro.

Attmore, Geo. S., Stonewall ..... Wash. Univ., Md., 1870.	1870	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Clark, J. T., Hobocken Non-graduate.	....	1905
*Daniels, O. C., Oriental Med. Coll. Va., 1903.	1903	1904
Dees, D. A., Bayboro Balto. Med. Coll., 1903.	1903	1905
Underhill, H. P., Bayboro Med. Coll. Va., 1901.	1901	1904

PASQUOTANK-CAMDEN-DARE COUNTY SOCIETY.

*President, W. W. Griggs ..... Elizabeth City.
Secretary, H. D. Walker ..... Elizabeth City.

Davis, J. J., Buxton Univ. Md., 1891.	1891	1905
Fearing, I., Elizabeth City P. & S., Balto., 1896.	1896	1904
Fearing, W. B., Manteo Univ. Md., 1881.	....	1904
Fearing, Zenos, Elizabeth City Med. Coll. Va., 1901.	1901	1904
Ferrebee, C. G., Shiloh Med. Coll. Va., 1903.	1904	1904
Griggs, J. B., Elizabeth City Univ. Md., 1892.	1892	1904
*Griggs, W. W., Elizabeth City Med. Coll. Va., 1863.	....	1904
Lamb, R. B., Elizabeth City Univ. Md., 1904.	1904	1905
Lumsden, W. J., Elizabeth City Univ. Md., 1869.	....	1888
*McMullan, Oscar, Elizabeth City Univ. Va., 1880.	....	1889
Sawyer, C. W., Elizabeth City Univ. Md., 1886.	....	1904
Sawyer, W. W., Shiloh Univ. Md., 1903.	1903	1905
Walker, H. D., Elizabeth City Univ. Md., 1902.	1902	1902
Wood, J. E., Elizabeth City Wash. Univ., Md., 1869.	....	1904

PENDER COUNTY SOCIETY.

President, W. H. Crowell ..... Burgaw.
Secretary, R. H. Bradford ..... Burgaw.

Alexander, L. L., Top Sail Sound Univ. N. Y., 1869.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Bradford, R. H., Burgaw N. C. Med. Coll., 1904.	1904	1905
Crowell, W. H., Burgaw Univ. Md., 1895.	1895	1896
Lucas, Geo. F., Currie Univ. N. Y., 1870.	....	1904
Williams, R. J., Rocky Point Jeff. Med. Coll., 1893.	1893	1904

PERQUIMANS COUNTY SOCIETY.

President, W. M. Riddick ..... Hertford.
Secretary, R. W. Smith ..... Hertford.

*McMullan, Thos. S., Hertford Univ. Va., 1888.	1889	1892
Riddick, T. M., Woodville P. & S., Balto., 1893.	1893	1904
Riddick, W. M., Hertford Univ. Pa., 1856.	....	1904
Smith, R. W., Hertford Univ. Md., 1892.	1892	1904
White, Thos. N., Belvidere P. & S., Balto., 1905.	....	1905
Winslow, C. C., Winfall Univ. Md., 1889.	....	1904

PERSON COUNTY SOCIETY.

*President, R. S. Baynes ..... Gordonton.
*Secretary, W. S. Bradsher ..... Roxboro.

*Baynes, R. S., Gordonton P. & S., Balto., 1881.	1881	1904
*Boyles, A. C., Mount Tirzah	....	1904
*Bradsher, W. A., Roxboro Univ. Md., 1904.	1904	1905
Nichols, C. G., Roxboro 1 co. Bellevue Med. Coll., 1884.	1885	1891
*Schaub, A. P., Roxboro Balto. Med. Coll., 1898.	1898	1898
Swann, J. F., Cunningham P. & S., Balto., 1896.	1896	1904
*Teague, R. J., Roxboro Univ. Md., 1890.	1890	1898
*Wise, J. A., Roxboro P. & S., Balto., 1886.	1885	1904

PITT COUNTY SOCIETY.

President, C. M. Jones ..... Grimesland.
Secretary, J. E. Nobles ..... Greenville.

Members and Address.	*Licensed.*	*Joined State Society.*
Bagwell, W. H., Greenville ..... P. & S., Balto., 1883.	1885	1887
Blount, Chas. Ayden, R. F. D. ..... Southern Med. Coll., Ga., 1885.	....	1904
Brown, Zeno, Greenville ..... Bellevue Med. Coll., 1883.	1885	1885
Cox, B. T., Winterville ..... Univ. Md., 1888.	1888	1888
Dawson, W. W., Grifton ..... Univ. Md., 1897.	1897	1900
Dixon, Joseph, Ayden ..... Med. Coll. Va., 1894.	1893	1895
Fountain, Wm., Greenville ..... Univ. Coll. Med., Va., 1898.	1899	1899
Grimes, R. J., Bethel ..... Non-graduate Univ. Pa., 1876.	....	1904
James, F. C., Bethel ..... Columbian Univ., D. C., 1859.	....	1904
Jones, C. M., Grimesland ..... Univ. Md., 1892.	1892	1895
Joyner, C. C., Farmville ..... Jeff. Med. Coll., 1899.	1899	1904
*Laughinghouse, Chas. O'H., Greenville ..... Univ. Pa., 1893.	1893	1894
Morrill, David S., Farmville ..... Balto. Med. Coll., 1897.	1897	1904
Morrill, Jenness, Falkland ..... Univ. Md., 1888.	1888	1904
*Moye, E. A., Jr., Greenville ..... Univ. Va., 1895.	1895	1897
Nobles, J. E., Greenville ..... Jeff. Med. Coll., 1899.	1899	1902
Ricks, L. E., Shelmurdine ..... Med. Coll. Va., 1896.	1896	1898
*Skinner, Lewis C., Ayden ..... Univ. Md., 1901.	1901	1902
Thigpen, G. F., Bethel ..... Univ. Md., 1903.	1903	1904
Whitfield, W. C., Qinnerly ..... Univ. Md., 1884.	1884	1884

RANDOLPH COUNTY SOCIETY.

*President, Samuel A. Henly.....Ashboro.
*Secretary, C. E. Hubbard .....Worthville.

Members and Address.	*Licensed.*	*Joined State Society.*
*Fox, Thos. I., Franklinsville ..... Vanderbilt Univ., 1894.	1899	1904
*Henly, Samuel A., Ashboro ..... Attended Jeff. Med. Coll., 1861.	....	1888
*Hubbard, C. C., Worthville ..... Jeff. Med. Coll., 1888.	1890	1904
*Hunter, J. V., Ashboro	....	1905
*Lewis, C. H., Farmer ..... Jeff. Med. Coll., 1878.	....	1904
Moore, W. J., Ashboro ..... P. & S., Balto., 1892.	1893	1901
McFadyen, Paul R., Randleman ..... Med. Coll. Va., 1901.	1901	1904
Redding, A. H., Cedar Falls ..... P. & S., Balto., 1887.	....	1904
*Summers, W. J., Randleman ..... Univ. Tenn., 1893.	1894	1904

RICHMOND COUNTY SOCIETY.

President, W. H. Steele .....Rockingham.
Secretary, L. D. McPhail .....Rockingham.

*Brown, G. W., Raeford ..... Ky. School Med., 1898.	1900	1904
Everett, A. C., Pegues ..... Univ. Md., 1897.	1897	1903
Fowlkes, J. I., Hamlet .... P. & S., Atlanta, 1903.	1903	1903
Garrett, F. J., Rockingham ..... Univ. Md., 1889.	1887	1904
Hiatt, J. T., Ellerbee ..... P. & S., Atlanta, 1901.	1901	1904
Kinsman, H. F., Hamlet ..... Univ. Vermont, 1894.	1897	1904
Ledbetter, J. M., Rockingham ..... Vanderbilt Univ., 1894.	1894	1903
McEachern, E. C., Cardova ..... Univ. Md., 1901.	1901	1905
McPhail, L. D., Rockingham ..... Univ. Md., 1900.	1900	1902
Steele, W. H., Rockingham ..... Bellevue Med. Coll., 1874.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Webb, W. P., Cordova ..... Med. Coll. S. C., 1897.	1897	1904
Williamson, J. H., Rockingham, R. F. D. ..... Jeff. Med. Coll., 1859.	....	1904

ROBESON COUNTY SOCIETY.

*President, J. D. McMillan .....Maxton.
Secretary, L. R. Kirkpatrick .....Maxton.

Brown, J. B., Ashpole ..... Med. Coll. S. C., 1858.	....	1904
Brown, J. P., Ashpole ..... Univ. Md., 1883.	....	1904
Croom, J. D., Maxton ..... Med. Coll. S. C., 1876.	....	1887
Dickson, A.P., Raeford ..... Univ. N. Y., 1878.	....	1904
Evans, Wm. E., Rowland ..... Med. Coll. Va., 1894.	1894	1904
Kirkpatrick, L. R., Maxton ..... N. C. Med. Coll., 1902.	1902	1902
*McIntyre, D. C., Lumberton ..... N. C. Med. Coll., 1904.	1904	1905
McKinnon, W. H., Red Springs ..... Bellevue Med. Coll., 1870.	....	1905
McMillan, Ben. F., Red Springs ..... Univ. Md., 1882.	1884	1884
*McMillan, J. D., Lumberton ..... Jeff. Med. Coll., 1876.	1876	1876
McMillan, J. L., Red Springs ..... Univ. Md., 1881.	1881	1902
McNatt, H. W., Maxton..... Univ. Md., 1881.	....	1905
Norment, R. M., Lumberton ..... Univ. Md., 1893.	1893	1904
Norment, T. A., Jr., Rowland ..... N. C. Med. Coll., 1894.	1893	1904
*Northrup, T. L., St. Pauls ..... Univ. Md., 1897.	1897	1903
Pate, G. M., Rowland ..... Med. Coll. S. C., 1900.	1900	1905
Pope, H. T., Lumberton ..... N. C. Med. Coll., 1894.	1893	1902
Rowland, W. H., Kingsdale ..... Non-graduate.	....	1904
Reedy, Howard, Rowland ..... Med. Coll. S. C., 1884.	....	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Rosier, R. G., Lumberton Univ. Md., 1899.	1899	1904
Rosier, S. B., Lumberton, R. F. D. Med. Coll. Va., 1855.	....	1904
Stamps, Thomas, Lumber Bridge Univ. Louisville, 1888.	1888	1888
Stephens, Wm. F., Ashpole Tenn. Med. Coll., 1901.	1898	1904

ROCKINGHAM COUNTY SOCIETY.

*President, C. B. McAnally ..... Madison.
*Secretary, J. W. McGehee ..... Reidsville.

Baird, C. A., Madison N. C. Med. Coll., 1904.	1904	1905
*Boaz, T. A., Stoneville Coll. P. & S., Balto, 1892.	1892	1905
*Brooks, E. H., Reidsville Balto Med. Coll., 1894.	1895	1904
*Dicks, Jas. F., Stoneville Univ. Coll. Med., Va., 1901.	1901	1905
*Davis, Thos. W., Maysdale Med. Coll., S. C., 1898.	1899	1905
Ellington, Sam, Wentworth	....	1904
Martin, S. L., Leaksville Balto. Med. Coll., 1892.	1892	1904
Matherson, R. C., Madison P. & S., Balto., 1891.	1891	1904
*McAnally, Chas. B., Madison Univ. N. Y., 1887.	1887	1896
*McGehee, J. W., Reidsville Univ. Md., 1904.	1904	1905
Stewart, J. T., Pleasantville	1898	1898
Thompson, Hugh R., Reidsville N. C. Med. Coll., 1904.	1904	1904
Tucker, F. P., Ruffin P. & S., Balto., 1882.	....	1904
*Wharton, C. R., Ruffin Med. Coll. Va., 1897.	1897	1904
*Williams, J. A., Reidsville Univ. Va., 1898.	1898	1898

ROWAN COUNTY SOCIETY.

President, J. B. Gaither ..... China Grove.
Secretary, I. Henry Foust ..... Salisbury.

*Atkins, G. J., China Grove	....	1905

Members and Address.	*Licensed.*	*Joined State Society.*
*Brawley, R. V., Salisbury Univ. Coll. Med., Va., 1900.	1900	1904
*Brown, Geo. A., Bear Poplar Univ. Coll. Med., Va., 1897.	1897	1898
*Brown, J. Stevens, Salisbury N. West. Univ. of Ill., 1893.	1894	1895
Busby, J. G., Spencer Univ. Md., 1904.	1904	1905
Caldwell, J. A., Salisbury Univ. Pa., 1854.	....	1904
*Chenault, W. F., Cleveland Univ. Md., 1888.	1888	1891
*Councill, Jeff. B., Salisbury P. & S., Balto., 1885.	1885	1904
Crump, W. L., Salisbury Jeff. Med. Coll., 1879.	1881	1904
Dorsett, E. Rose, Salisbury Jeff. Med. Coll., 1869.	....	1904
*Flippen, J. Meigs, Salisbury P. & S., Balto., 1884.	....	1893
Foust, I. Henry, Salisbury Vanderbilt Univ., 1899.	1898	1904
Gaither, J. B., China Grove P. & S., Balto., 1869.	....	1904
*Goodman, A. B., Crescent N. C. Med. Coll., 1898.	1897	1904
Henderson, A. G., Woodleaf Jeff. Med. Coll., 1861.	....	1904
Heathman, J. D., Woodleaf, Univ. Md., third course, 1899.	1899	1904
Heilig, H. G., Salisbury Univ. Md., 1899.	1899	1904
*McKenzie, W. W., Salisbury Jeff. Med. Coll., 1893.	1893	1894
*Monk, H. L., Spencer Med. Coll. Va., 1897.	1899	1903
*Peeler, J. H., Granite Quarry Univ. Coll. Med., Va., 1899.	1899	1904
*Poole, C. M., Craven P. & S., Balto., 1880.	1880	1880
Poole, G. M. Van, Craven (U. S. Army) Univ. Md., 1899.	1899	1899
*Ramseur, G. A., China Grove Jeff. Med. Coll., 1880.	....	1898
*Smoot, M. L., Spencer Univ. Coll. Med., Va., 1903.	1903	1904
*Summerell, E. M., Mill Bridge Univ. Pa., 1883.	1883	1883

Members and Address.	*Licensed.*	*Joined State. Society.*
*Stokes, J. E., Salisbury Univ. M., 1892.	1900	1901
Trantham, H. T., Salisbury Univ. N. Y., 1875.	1878	1879
*West, R. M., Salisbury Med. Coll. Va., 1900.	1900	1904
Whitehead, John, Salisbury Univ. Pa., 1880.	1880	1880
Withers, Banks, Enochsville Univ. Md., 1896.	1896	1904
Young, J. W., Spencer Univ. Md., 1898.	1898	1904

RUTHERFORD COUNTY SOCIETY.

President, T. B. Twitty ..... Rutherfordton.
*Secretary, E. B. Harris ..... Rutherfordton.

Andrews, R. M., Cliffdale Memphis Hosp. Coll. Med., Tenn., 1904.	1904	1905
Chapman, G. M., Logans Store Grant Univ., Tenn., 1904.	1904	1905
Hamrick, T. G., Caroleen P. & S., Balto., 1895.	1895	1904
*Harris, E. B., Rutherfordton P. & S., Balto.	....	1904
Harrell, L. B., Caroleen U. S. Grant Univ., Tenn.	....	1904
Hicks, Romeo, Henrietta Southern Med. Coll., Ga., 1888.	....	1899
Hicks, O., Caroleen Med. Coll. Va.	....	1904
Jonas, J. F., Thermal City Balto. Med. Coll., 1903.	1903	1903
Lovelace, T. B., Henrietta P. & S., Balto., 1883.	....	1904
Reid, Geo. P., Forest City Univ. Coll. Med., Va., 1895.	1894	1889
Thompson, W. A., Rutherfordton P. & S., Balto.	....	1904
Thompson, J. B., Cliffdale Coll. P. & S., Balto., 1898.	1898	1904
Twitty, T. B., Rutherfordton Univ. N. Y., one year, 1868.	....	1904
Wiseman, C. B., Henrietta P. & S., Balto., 1902.	1902	1902
Young, G. E., Forest City One course Univ. Pa., 1859.	1885	1904

SAMPSON COUNTY SOCIETY.

President, Jno. A. Stevens ..... Clinton.
*Secretary, G. L. Sikes ..... Salemburg.

Members and Address.	*Licensed.*	*Joined State Society.*
*Bullock, T. C., Autryville	....	....
Cooper, F. J., Roseboro P. & S., Balto., 1884.	1885	1904
Holiday, R. H., Clinton 1 co. Wash. Univ., Md., 1868.	....	1904
Holmes, F. H., Clinton Univ. Md., 1895.	1895	1896
Kerr, C. S., Kerr Univ. Md., 1869.	....	1904
Lee, A. M., Clinton Med. Coll. Va., 1862.	....	1904
Lee, R. E., Clinton Univ. Md., 1896.	1896	1900
*Matthews, J. O., Taylor's Bridge Univ. Coll. Med. Va., 1897.	1897	1902
*Sikes, G. L., Salemburg Univ. Coll. Med. Va., 1900.	1900	1904
Sloan, Henry, Ingold Med. Coll. S. C., 1881.	1885	1902
Stevens, J. A., Clinton Jeff. Med. Coll., 1883.	1883	1883
Taylor, W. I., Harrell's Store N. C. Med. Coll., 1902.	1904	1905
*Wilson, R. B., Newton Grove Ky. School Med., 1889.	1890	1904

SCOTLAND COUNTY SOCIETY.

President. D. M. Prince ..... Laurinburg.
Secretary. A. W. Hamer ..... Laurinburg.

Blue, K. A., Laurinburg Univ. Md., 1890.	1890	1892
Everington, Geo. D., Laurinburg N. C. Med. Coll., 1899.	1898	1898
Hamer, A. W., Laurinburg Med. Coll. S. C., 1858.	....	1904
John, Peter, Laurinburg Univ. Md., 1897.	1897	1904
McLean, Neil, Gibson Univ. Md., 1883.	1883	1888
*Pate, W. T., Gibson P. & S., Balto., 1885.	1885	1885

Members and Address.	*Licensed.*	*Joined State. Society.*
Prince, D. M., Laurinburg Med. Coll. S. C., 1871.	1879	1879
Shaw, Daniel, Fontcol Jeff. Med. Coll., 1853.	....	1904
Shaw, Wm. G., Fontcol P. & S., Balto., 1892.	1895	1904

STANLY COUNTY SOCIETY.

*President, T. A. Hathcock ..... Norwood.
Secretary, J. M. Lilly ..... Norwood.

*Anderson, J. N., Albemarle Univ. Md., 1895.	1895	1904
Campbell, J. I., Norwood Non-graduate.	1898	1904
*Hartsell, F. E., Big Lick Balto. Med. Coll., 1895.	1895	1905
*Hathcock, T. A., Norwood Univ. Md., 1893.	1893	1904
*Hill, W. I., Albemarle Univ. Md., 1897.	1897	1904
*King, O. D., Albemarle Long Island Med. Coll., 1887.	1887	1887
Lilly, J. M., Norwood Univ. Coll. Med. Va., 1903.	1903	1904
Whitley, D. P., Millingpost Univ. Md., 1889.	1890	1898
Whitley, V. A., Albemarle Univ. Md., 1884.	1884	1904

STOKES COUNTY SOCIETY.

*President, W. V. McCanless ..... Danbury.
Secretary, Elias Fulp ..... Walnut Cove.

Dicks, D. E., Madison	....	1905
Eflington, J. H., Sandy Ridge P. & S., Balto., 1872.	....	1904
Fulp, Elias, Walnut Cove Univ. N., 1882.	....	1896
Hill, L. H., Germanton Jeff. Med. Coll., 1861.	1877	1877
*Jones, A. G., Walnut Cove Univ. N. Y.	....	1904
Leak, J. J., Dan River Univ. Coll. Med. Va., 1901.	....	1904
McCanless, W. L., Danbury Univ. N. Y., 1892.	1893	1904

Members and Address.	*Licensed.*	*Joined State. Society.*
*McCanless, W. V., Danbury P. & S., Balto., 1888.	....	1904
*Moir, S. A., Francisco P. & S., Balto., 1888.	....	1904
Moore, W. B., Smith P. & S., Balto., 1893.	1893	1904
Neal, J. W., Meadows P. & S., Balto., 1889.	....	1904
Phillips, M. D., Dalton Univ. N. Y., 1881.	1881	1904
Slate, J. S., Pinacle Non-graduate N. C. Med. Coll.	1899	1904
Slate, J. W., Mizpah Non-graduate N. C. Med. Coll.	1899	1904
Slate, W. C., King Univ. Tenn., 1903.	1903	1904
*Smith, J. T., Westfield Jeff. Med. Coll., 1899.	1899	1904
Watkins, T. T., Advance	....	1905
Withers, W. W., Walnut Cove Univ. Nashville, Tenn., 1861.	....	1904

SURRY COUNTY SOCIETY.

*President, J. B. Smith ..... Pilot Mountain.
*Secretary, E. M. Hollingsworth ..... Mt. Airy.

Allred, E. W., Mount Airy Jeff. Med. Coll., 1877.	....	1904
Ashby, T. B., Mount Airy Coll. P. & S., Balto., 1885.	1885	1896
*Flippen, S. T., Siloam N. C. Med. Coll., 1898.	1898	1898
*Flippen, R. E. L., Pilot Mountain Balto. Med. Coll., 1897.	1897	1901
Folger, W. C., Dobson Barnes' Med. Coll., Mo., 1898.	1892	1904
*Hollingsworth, Ed. M., Mt. Airy P. & S., Balto., 1886.	1886	1904
Hollingsworth, J. M., Mt. Airy P. & S., Balto., 1886.	1886	1904
Hollingsworth, R. E., Mt. Airy Univ. Coll. Med. Va., 1898.	1899	1904
Hollingsworth, J. B., Mt. Airy Jeff. Med. Coll., 1880.	....	1905
Reece, J. M., Elkin P. & S., Balto., 1886.	....	1904

Members and Address.	*Licensed.*	*Joined State. Society.*
Ring, J. W., Elkin P. & S., Balto., 1880.	....	1904
*Smith, J. B., Pilot Mountain P. & S., Balto., 1885.	....	1896
*Taylor, W. S., Mount Airy Jeff. Med. Coll., 1874.	....	1894
Thompson, K., Ladonia Jeff. Med. Coll., 1858.	....	1904
*Woltz, John L., Pilot Mountain Southern Med. Coll., Ga., 1897.	1902	1904
Woltz, John R., Dobson	....	1904

SWAIN COUNTY SOCIETY.

President, J. H. Teague ..... Whittier.
Secretary, A. M. Bennett ..... Bryson City.

Bennett, A. M., Bryson City One year Louisville Med. Coll.	1885	1899
Bryson, Dan R., Bryson City Univ. Md., 1900.	1900	1904
Cooper, J. A., Bryson City	....	1904
Davis, Robt. L., Bryson City South. Med. Coll., Ga., 1891.	....	1893
Holt, Russell D., Cherokee Med. Coll. Va., 1899.	1899	1904
Teague, J. H., Whittier Non-graduate Jeff. Med. Coll., 1881.	1885	1904

TRANSYLVANIA COUNTY SOCIETY.

President, Edwin S. English ..... Brevard.
*Secretary, Goode Cheatham ..... Brevard.

Brooks, Whitfield, Toxaway Columbian Univ., D. C., 1860.	....	1904
Cannon, J. A., Calvert Southern Med. Coll., Ga., 1884.	....	1904
*Cheatham, Goode, Brevard N. C. Med. Coll., 1895.	1895	1896
English, Edwin S., Brevard Univ. of South, Tenn., 1901.	1902	1904
Garner, H. H., Brevard Univ. Md., 1902.	1904	1905
Hunt, C. W., Brevard P. & S., Balto., 1880.	1881	1904
King, M. M., Brevard Eclectic Med. Coll., Ga., 1880.	....	1904

Members and Address.	*Licensed.*	*Joined State. Society.*
Lyda, A. E., Penrose Tenn. Med. Coll.	....	1904
Lyda, W. M., Penrose P. & S., Balto., 1891.	....	1904
Wallis, W. J., Brevard P. & S.. Balto., 1892.	1897	1904
Young, G. W., Brevard Attended Univ. Ga., 1884.	....	1904

UNION COUNTY SOCIETY.

President, G. B. Nance.....Munroe.
*Secretary, Jno. W. Neal.....Munroe.

*Armfield, R., Marshville Med. Coll. Va., 1881.	....	1904
Ashcraft, J. E., Munroe Univ. N. Y., 1887.	1887	1888
Bailey, J. W., Bakersville P. & S., St. Louis, 1901.	1902	1904
*Blair, J. M., Munroe Louisville Med. Coll., 1887.	....	1898
Dees, W. A., Marshville Univ. Ga., 1891.	1893	1904
Ewbanks, J. B., Zoah Vanderbilt Univ., 1887.	....	1904
Hunter, J. V., Waxhaw Univ. Louisville, Ky., 1898.	1898	1904
Houston, H. C., Waxhaw Univ. Nashville, 1899.	1899	1903
Nance, Geo. B., Munroe Jeff. Med. Coll., 1885.	1885	1904
*Neal, Jno. W., Munroe Univ. N. Y., 1884.	1887	1904
Price, W. H., Wardlaw	....	1904
Roberson, Waxhaw Univ. Coll. Med., Va., 1899.	1899	1905
*Stevens, S. A., Munroe Univ. Md., 1900.	1898	1904
*Stewart, H. D., Munroe Univ. Md., 1898.	1898	1904
*Whitley, A. D. N., Unionville Non-graduate Univ. Md.	1897	1904

VANCE COUNTY SOCIETY.

President, G. A. Coggeshall .....Henderson.
*Secretary, A. S. Pendleton .....Henderson.

Alston, B. P., Epsom Univ. Md.. 1868.	....	1868

Members and Address.	*Licensed.*	*Joined State Society.*
Bass, H. H., Henderson Univ. Coll. Med., Va., 1899.	1899	1900
Coggeshall, G. A., Henderson Bellevue Med. Coll., 1879.	1894	1897
Ferebee, C. G., Kittrell Univ. Md., 1903.	1904	1904
Gill, R. J., Henderson Univ. Pa., 1867.	....	1883
*Harris, F. R., Henderson Univ. Va., 1881.	1883	1883
Judd, W. J., Henderson Wash. Univ., Mo., 1861.	....	1904
MacAlister, William, Middleburg P. & S,. Balto., 1890.	1890	1904
*Pendleton, A. S., Henderson Univ. Pa., 1895.	1898	1899
*Tucker, Jno. H., Henderson Univ. Va., 1899.	1901	1904

WARREN COUNTY SOCIETY.

*President, P. J. Macon ..... Warrenton.
Secretary, B. Ray Browning ..... Littleton.

Alston, Willis, Littleton Univ. Md., 1869.	1869	1870
Alston, Willis, Jr., Littleton Univ. Md., 1903.	1903	1903
Browning, B. Ray, Littleton Univ. Md., 1891.	1891	1899
*Macon, P. J., Warrenton Univ. Md., 1883.	1883	1901
Perry, M. P., Macon P. & S., Balto., 1884.	1884	1884
Picot, L. J., Littleton Jeff. Med. Coll., 1873.	1875	1875

WAKE COUNTY SOCIETY.

President, P. E. Hines ..... Raleigh.
Secretary, Harvey G. Utley ..... Apex.

Banks, T. L., Raleigh, R. F. D. Univ. Pa., 1856.	....	1904
Battle, K. P., Jr., Raleigh Univ. Va., 1881; Bellevue, 1882.	1882	1889
Bell, G. M., Wakefield P. & S., Balto., 1880.	....	1893

Members and Address.	*Licensed.*	*Joined State Society.*
Blalock, N. M., McCullers P. & S., Balto., 1890.	1890	1904
*Boone, W. H., Morrisville N. C. Med. Coll., 1902.	1902	1904
Buffalo, J S., Garner Balto. Med. Coll., 1900.	1900	1904
Burt, B. W., Enno P. & S., Balto., 1886.	1886	....
*Caveness, Z. M., Raleigh, R. F. D. Univ. N. C., 1903.	1903	1903
*Cooke, Fred. K., Wake Forest Tulane Univ., La., 1901.	1902	1902
Cotten, A. T., Raleigh P. & S., Balto., 1879.	....	1885
Dixon-Carroll, E. Delia, Raleigh Woman's Med. Coll., N. Y., 1895.	1900	1900
Dowd, C. F., Willow Springs Univ. Pa., 1867.	....	1904
Ferebee, E. B., Raleigh P. & S., Balto., 1885.	1885	1903
Fowler, M. L., Rolesville P. & S., Balto., 1881.	....	1904
Goodwin, A. W., Raleigh Bellevue Med. Coll., 1887.	1887	1887
*Graham, Joseph, Raleigh Univ. Pa., 1901.	1902	1902
Harris, H. H., Wake Forest Univ. Pa., 1860.	1860	1886
Hayden, Catherine P., Raleigh Univ. Colorado, 1894.	1902	1904
Haywood, F. J., Raleigh Bellevue Med. Coll., 1868.	....	1898
Haywood, Hubert, Raleigh Bellevue Med. Coll., 1879.	....	1904
Hines, P. E., Raleigh Univ. Pa., 1852.	....	1853
Holding, S. P., Wake Forest Bellevue Med. Coll., 1897.	1897	1904
Horton, W. C., Raleigh P. & S., Balto., 1897.	1896	1904
Jenkins, C. L., Raleigh Univ. N. Y., 1890.	1890	1892
Johnson, R. W., Apex Univ. Tenn., 1900.	1901	1904
Jones, A. O., Raleigh Bellevue Med. Coll., 1890.	1890	1904
Jordan, T. M., Raleigh P. & S., Balto., 1881.	1881	1881

Members and Address.	*Licensed.*	*Joined State Society.*
Judd, J. M., Fuquay Springs..... Balto. Med. Coll., 1897.	1898	1901
*Knox, A. W., Raleigh..... Bellevue Med. Coll., 1874.	1878	1880
*Lewis, R. H., Raleigh..... Univ. Md., 1871.	1877	1877
Mashburn, B. D., Raleigh, R. F. D..... Non-Grad. P. & S., Balto., 1875-'6.	....	1904
Mashburn, H. H., Neuse, R. F. D..... Non-Grad. P. & S., Balto., 1876.	....	1904
*MacNider, W. DeB., Raleigh..... Univ. N. C., 1903.	1903	1903
McCullers, J. J. L., McCullers..... P. & S., Balto., 1886.	1886	1904
McGeachey, R. S., Raleigh..... Bellevue Med. Coll., 1894.	1894	1895
McGee, J. W., Raleigh..... Univ. Pa., 1860.	1860	1885
McGee, J. W., Jr., Raleigh..... Bellevue Med. Coll., 1888.	1888	1888
McKee, James, Raleigh..... Bellevue Med. Coll., 1869.	1870	1870
Penny, J. A. J., Vanteen..... Univ. N. Y., 1861.	....	1904
Powers, J. B., Wake Forest..... Long Island Med. Coll., 1878.	1885	1904
Ray, O. L., Bangor..... Univ. Coll. Med., Va., 1899.	1899	1904
*Rankin, W. S., Wake Forest..... Univ. Md., 1901.	1901	1901
Rogers, Jas. R., Raleigh..... P. & S., Balto., 1886.	1886	1904
*Royster, H. A., Raleigh..... Univ. Pa., 1894.	1894	1895
Royster, W. I., Raleigh..... Bellevue Med. Coll., 1869.	1869	1871
Sorrell, L. P., Flint..... Med. Coll. Va., 1875.	....	1904
*Templeton, J. M., Cary..... Balto. Med. Coll., 1882.	1882	1904
Thompson, S. W., Falls..... Med Coll. Va., 1875.	....	1904
*Tucker, H. McKee, Raleigh..... Univ. Md., 1899.	1899	1899
Utley, B. S., Holly Springs..... P. & S., Balto., 1878.	....	1886
Utley, H. G., Apex..... Univ Md., 1894.	1901	1901

WASHINGTON COUNTY SOCIETY.

President, W. H. Hardison.....Creswell.
Secretary, J. L. Hassell.....Creswell.

Members and Address.	*Licensed.*	*Joined State Society.*
Early, W. W., Plymouth Univ. Pa., 1893.	1901	1904
Hassell, J. L., Cresswell P. & S., Balto., 1886.	....	1904
Halsey, B. F., Roper Vanderbilt Univ., 1893.	1895	1900
Hardison, W. H., Creswell Wash. Univ., Md., 1870.	....	1904
Speight, J. W., Roper Ky. School Med., 1885.	1885	1904
Ward, W. H. Plymouth Univ. Md., 1881.	1886	1900

WATAUGA-MITCHELL COUNTY SOCIETY.

President, J. W. Jones.....Boone.
Secretary, McD. Little .....Horton.

Jones, J. Walter, Boone U. S. Grant Univ., 1900.	1902	1904
Little, McD. Horton	....	1904

WAYNE COUNTY SOCIETY.

President, J. F. Miller.....Goldsboro.
Secretary, W. K. Lane.....Goldsboro.

*Aaron, L. P., Mount Olive Univ. Md., 1895.	1896	1897
Benton, Geo. R., Eureka Med. Coll. Va., 1901.	1901	1904
Cobb, W. H. H., Goldsboro Univ. Pa., 1861.	1878	1878
*Cobb, W. H., Jr., Goldsboro Jeff. Med. Coll., 1889.	1889	1890
Crawford, W. B., Walter Bellevue Med. Coll., 1886.	1886	1904
Exum, W. P., Jr., Goldsboro, R. F. D Med. Coll. Va., 1901.	1902	1904
Faison, W. W., Goldsboro Jeff. Med. Coll., 1878.	1883	1904
Ginn, Theo. L., Goldsboro Med. Coll. Va., 1901.	1901	1904

Members and Address.	*Licensed.*	*Joined State Society.*
*Hayes, L. O., Fremont Univ. Coll. Med., Va.	1897	1904
Hill, Thomas, Goldsboro Univ. N. Y., 1854.	....	1904
Jones, W. J., Goldsboro Univ. N. Y., 1858.	....	1860
Kennedy, J. B., Grantham Univ. Nashville, 1870.	....	1904
Lane, W. K., Goldsboro Jeff. Med. Coll., 1902.	1902	1902
Miller, J. F., Goldsboro Jeff. Med. Coll., 1858.	....	1873
Miller, R. B., Goldsboro Med. Coll. Va., 1898.	1900	1905
Powell, W. E., Goldsboro P. & S., Balto., 1882.	1885	1904
Roberts, J. D., Mount Olive Bellevue Med. Coll., 1875.	1877	1904
*Robinson, M. E., Goldsboro Wash. Univ. Md., 1870.	....	1886
Smith, R. A., Goldsboro Vanderbilt Univ., 1879.	1882	1882
Spicer, J. D., Goldsboro Jeff. Med. Coll., 1859.	....	1904
Spicer, John, Goldsboro Belluevue Med. Coll., 1889.	1890	1904
Spicer, William, Goldsboro Bellevue Med. Coll., 1898.	1897	1904
Steele, W. C., Mount Olive Univ. Md., 1894.	1891	1894
Sutton, W. G., Seven Springs Jeff. Med. Coll., 1889.	1889	1896
Turlington, W. T., Fremont P. & S., Balto., 1894.	1894	1895

WILKES COUNTY SOCIETY.

President, J. W. White.....Wilkesboro.
*Secretary, W. P. Horton.....North Wilkesboro.

Bryant, C. G., Roaring River	....	1904
Eller, A. J., Ready Branch P. & S., Balto., 1893.	1895	1904
Gilreath, F. H., North Wilkesboro Univ. Nashville.	1898	1898
Hamby, C. L. Dehart	....	1904
*Horton, W. P., North Wilkesboro Balto. Med. Coll., 1892.	1896	1904

Members and Address.	*Licensed.*	*Joined State Society.*
Myers, J. Q., North Wilkesboro..... N. C. Med. Coll., 1904.	1904	1904
Somers, L. P., Osbornville.....	....	1904
Turner, J. M., Wilkesboro..... Univ. Louisville, Ky., 1881.	....	1904
White, J. W., Wilkesboro..... Jeff. Med. Coll., 1889.	1889	1890
*Moseley, Chas. W., North Wilkesboro..... Balto. Med. Coll., 1893.	1893	1896

WILSON COUNTY SOCIETY.

President, H. F. Freeman.....Taylors.
Secretary, Isaac W. Lamm..... .....Lucama.

*Anderson, Albert, Wilson ..... Univ. Va., 1888.	1889	1889
Anderson, Nathan, Wilson ..... Eclectic Med. Institute, Cincinnati, 1873.	....	1904
*Anderson, W. H., Wilson..... Univ. Va., 1902.	1904	1905
Barnes, B. F., Saratoga..... Univ. Md., 1902.	1902	1902
Brooks, Thos. L., Black Creek..... Univ. Coll. Med., 1899.	1899	1899
Chears, B., Elm City.....	....	1904
Crocker, Wm. D., Lucama..... Louisville Med. Coll., 1887.	1896	1904
Crocker, S. H., Statonsburg..... Ky. School Med., 1893.	1894	1899
*Dickenson, E. T., Wilson ..... Med. Coll. Va., 1895.	1895	1900
Freeman, H. F., Taylors..... Coll. P. & S., Balto., 1878.	1879	1905
Herring, B. S., Wilson..... Univ. Mich., 1900.	1901	1901
*Lamm, Isaac W., Lucama..... Univ. Coll., Med., Va., 1899.	1899	1900
Moore, C. E., Wilson..... Bellevue Med. Coll., 1875.	1875	1875
Moore, E. G., Elm City..... Univ. Med., 1883.	1883	1890
Williams, A. F., Wilson.....	....	1905

YADKIN COUNTY SOCIETY.

*President, T. W. Shore.....Boonville.
Secretary, B. W. Fassett.....Cross Roads.

Members and Address.	*Licensed.*	*Joint State Society.*
Blackwell, T. L., Boonville..... Louis. Med. Coll., 1874.	....	1905
Clingman, J. J., Huntsville..... Attended P. & S., Balto., 1876.	....	1904
Fassett, B. W., Cross Roads..... Balto. Med. Coll., 1898.	1899	1904
*Holcombe, C. M., Boonville..... P. & S., Balto., 1869.	....	1905
*Hutchins, E. M., Boonville..... N. C. Med. Coll.	1896	1904
*Leak, W. G., East Bend..... N. C. Med. Coll., 1900.	1899	1904
*Matthews, M. L., East Bend..... Univ. N. C., 1903.	1903	1904
Matthews, J. M., East Bend..... Univ. Tenn., 1890.	....	1899
Royall, M. A., Yadkinville..... P. & S., Balto., 1890.	....	1904
Russell, S. L., Yadkinville..... Univ. Tenn., 1890.	....	1904
*Shore, Thad. W., Boonville..... Univ. Coll. Med., Va., 1898.	1899	1904

YANCEY COUNTY SOCIETY.

President, J. L. Ray.....Burnsville.
Secretary, J. B. Gibbs.....Burnsville.

Austin, W. M., Burnsville..... Non-Graduate.	....	1904
Edwards, C. P., Bald Mountain..... Tenn. Med. Coll., 1900.	1903	1903
Gibbs, J. B., Burnsville..... N. C., Med. Coll., 1904.	1904	1905
Hall, J. M., Newdale..... Non-Graduate.	....	1905
Ray, J. L., Burnsville..... P. & S., Balto., 1887.	1887	1890

HONORARY FELLOWS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

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*H. T. Bahnson	Salem.	*P. L. Murphy	Morganton.
W. W. Lane	Wilmington.	J. F. Miller	Goldsboro.
W. J. Love	Wilmington.	J. F. Shaffner	Salem.
James McKee	Raleigh.	B. P. Alston	Henderson.
Willis Alston	Littleton.	W. J. Jones	Goldsboro.
W. J. H. Bellamy	Wilmington.	F. J. Haywood	Raleigh.
W. I. Royster	Raleigh.	F. A. Barrier	Mount Pleasant.
*George G. Thomas	Wilmington.		

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L. McL. Tiffany	Batimore, Md.	W. T. Howard	Baltimore, Md.
W. W. Keen	Philadelphia, Pa.	*W. L. Robinson	Danville, Va.
J. Allison Hodges	Richmond, Va.	J. N. McCormack	Bowling Green, Ky.
*R. L. Payne	Norfolk, Va.	*J. C. Walton	Danville, Va.

May, 1905. Total membership Medical Society of the State of North Carolina including eight honorary members, 1,200. Of the 97 counties of the State the physicians of 92 counties are organized in county societies in affiliation with and component branches of the State Medical Society. At this date only the following five remain unorganized: Alleghany, Chowan, Hyde, Jones and Tyrrell.

Three hundred and sixty-one members registered at 1905 session. This number does not include applicants for license or other than enrolled members.

* Registered as present at Greensboro meeting, 1905.

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